

⊗ B.M.

THE BAS
OF SOUT
DEED RE

VC. BASE
E POST
UND)

MW #1

70.00'

CENTERLINE OF WESTBOUND TRACK

CONRAIL R.R.

FORMERLY THE P. FT. W. & C. R.

S 78° 29' 11" E

2423.77'

○ TANK

MW #4

U.S.T. AREA

RECIR
SYST.

UNDERGROUND
STORAGE TANK
AREA

FACTORY
BUILDING

MW #3

MW #6

#1
LAGOON
WATER
EL. 1055.5

MW #2

#2
LAGOON
WATER ELEV. 1048.2

MW #5

SOUTHWAY ST-S-W 60'

C.H. 247

CDF005153

CHAIN LINK FENCE

S 87° 30' 00" E

1100.00'

N 87° 30' 00" E

" IRON
E SET
UND)

NAIL SET

E: NOT FOUND

6
2(b)(3)

3(b), 2(b),
7

PROGRESS REPORT NO.7
CLEAN UP DESIGN / CLEAN UP ACTION

PERIOD: JANUARY 11, 1994 TO JANUARY 28, 1994

I. CLEAN UP DESIGN (oil separator)

A. ACTIVITIES PERFORMED THIS REPORTING PERIOD

- a) The Massillon Industrial Pretreatment Division was contacted to determine what the requirements are to get a new discharge approved.
- b) Information was gathered from Ron Kendrick as to the outlet points for oil laden condensate.
- c) The analysis of condensate for 107 chemicals was completed.
- d) Catalogs for steam control equipment were received.

B. DATA PRODUCED THIS REPORTING PERIOD

- a) Massillon Sewer is not meeting there discharge limits for mercury, cyanide, and solids. As a result they are in trouble with EPA and are not at all interested in any new sources. They are considering our request for discharge of oil laden condensate water and scrubber water after most of the solids have been removed.
- b) Low pressure steam condensate (hammer exhaust) is the source of oil that requires separation. This low pressure steam is used for heat in the area of the forge shop office, for heating water in the hot process softener, and is continuously drained from the steam/condensate separator at the north end of the forge shop.
- c) Comments on the water analysis
107 CHEMICALS
All 107 chemicals were below detection limits.
- d) The most efficient method to remove the oil from the condensate may be immediately following a steam trap at the points noted in B,b).

C. ACTIVITIES SCHEDULED FOR THE NEXT REPORTING PERIOD

- a) Specific equipment will be reviewed for the removal of condensate from our low pressure steam lines and for oil removal from condensate.
- b) Gather information on 5 day BOD reduction, and sources of BOD problems.

- c) Hammontree has been asked to determine the permissible limits for oil and grease levels in water flowing to our lagoons.
- d) A follow up with the Massillon Sewer District will be scheduled.
- e) Prepare RFQ for purchase of the separator within 10 days after completion of the above activities.

II. CLEAN UP ACTION (lagoon #1)

A. ACTIVITIES PERFORMED THIS REPORTING PERIOD

- a) The discharge pump for lagoon #1 failed causing the oil level to rise several feet. As a result the Hudson Industries pump and motor was found below the oil level. The motor is now out to be cleaned.
- b) Eight drums of used die lube are available for processing.

B. DATA PRODUCED THIS REPORTING PERIOD

- a) None.

C. ACTIVITIES SCHEDULED FOR THE NEXT REPORTING PERIOD

- a) More die lube will be collected and stored. A quantity of 15 drums is required to see if this material can be recycled.
- b) We will begin pumping the pond oil when the motor is back and the oil temperature increases a few degrees.

Keith J. Houseknecht

cc: W.K. Cordier
J.P. Bressanelli
L.L. Stalnaker
F.H. Zollinger, Jr.

3(b), 2(b), 7

Subject: Progress Report On Audit Action Plan
Project III-New Pre-treatment System and Lagoon
Remediation

Following is a progress report on Project III described in the March 31, 1993 Canton Drop Forge Audit Action Plan.

Phase A - Process water pre-treatment system

Task I - Delineate scope of work required, develop system concept, design system and file request for permit to install.

Current Status

Measurement of volumes of oil/water effluents.

Lagoon #1

Source #1 Storm water only point is normally submerged. No flow has been estimated.

Source #2 Abandon drain from upsetter pits. The writer has never observed a flow from this line.

Source #3 Storm sewer and process water from the north end of the forge shop. This flow is highly variable due to the impact of rain and the condition of water retaining devises on the rotary hearth forge furnaces. Typical process water volume is estimated at 30 GPM.

Outflow #4 This is the pump to transfer water from lagoon #1 to lagoon #2.

Source #5 Storm sewer and process water from the center of the forge shop. This flow is highly variable due to the impact of rain and the condition of water retaining devises on the rotary hearth forge furnaces. Typical process water volume is estimated at 24 GPM.

Source #6 Storm sewer and process water from the south end of the forge shop. This flow is some what variable due to the impact of rain and the amount of condensate from the high pressure steam line. Typical process water volume is estimated at 1.5 GPM.

Lagoon #2

CDF005156

Source #7 Storm water and process water from lagoon #1 (Outflow #4); low pressure steam condensate from the steam/condensate separators at the north end of the forge shop, at the end of the anvil heater lines, prior to the hot process softener, and at the end of the heater line to the forge shop offices; blow down from the hot process softener; drain water from the scrubber; storm water from the east end of the shop; and blow down from the

The condensate from the low pressure steam lines is of concern due to the presents of oil. The total flow from the four sources is less than five GPM.
Source #8 Storm water from the office parking lot, storm water from the die shop roof, drain water from the cooling tank in the south end of the die shop.
Outflow #9 This is the pump to transfer water from lagoon #1 to lagoon #2.

Analyses to identify effluent constituents.

Lagoon #1

A composite sample from Sources #3, #5 and #6 was analyzed for the following.

- 7 METALS
- BOD, 5 DAY
- OIL/GREASE
- pH, LAB
- SPECIFIC GRAVITY
- RESIDUE, NONFILTERABLE (SUSPENDED)
- VISCOSITY (@ 100 C)
- 90 CHEMICALS
- 18 PESTICIDES
- 7 PCB'S

The oil/grease at 82 MG/L was the only significant result. This is close to the 100 MG/L limit for Massillon and too high for storm water.

Lagoon #2

A composite sample of low pressure steam condensate from the steam/condensate separators at the north end of the forge shop and at the end of the heater line to the forge shop offices was analyzed for the following.

- 7 METALS
- BOD, 5 DAY
- OIL/GREASE
- pH, LAB
- SPECIFIC GRAVITY
- RESIDUE, NONFILTERABLE (SUSPENDED)
- VISCOSITY (@ 100 C)
- 90 CHEMICALS
- 18 PESTICIDES
- 7 PCB'S

The significant results are as follows.

- BOD, 5 DAY
- was 612 MG/L, Massillon reg. 300 MG/L

CDF005157

OIL/GREASE

was 2500 MG/L, Massillon reg. 100 MG/L

RESIDUE, NONFILTERABLE (SUSPENDED)

was 1020 MG/L, Massillon reg. 300 MG/L

Quotations from producers or designers of pre-treatment equipment.

Hammontree & Associates, Limited

Preliminary design and report ----- \$17,400.00

Michalek & Associates, Inc.

Design for re-route of existing piping ----- \$3,345.00

Size oil separator for 100 gpm capacity ----- \$6,000.00

Highland Tank & Mfg.

Complete 100gpm (10ppm) separator ----- \$10,053.00

Hudson Industries

Complete 100gpm (15ppm) separator ----- \$17,140.00

Preliminary discussions with Massillon Industrial
Pre-treatment Division.

Massillon is considering our request to investigate the possible discharge of treated condensate and treated scrubber water. Massillon is currently facing a possible EPA fine for not meeting discharge limitations on mercury, cyanide, and solids. This possible fine is making it difficult for them to consider any new sources.

Phase B - Remediation of lagoons #1 and #2

Task I - Remove and properly dispose of oil/water emulsion.

Current Status

17,568 gallons of oil/water emulsion have been removed. A pump and skimmer is currently on site from Hudson Industries. This pump is sized to pump 100 GPM. As soon as the weather warms up a few degrees this system will be tested. If successful the system will be rented for a set cost per week and pumping will begin immediately.

cc: Hsieh &
1(c), 7, 2(b)

CANTON DROP FORGE, INC.
AUDIT ACTION PLAN

Project I - PCB Remediation

Phase A - Conduct soil tests to delineate scope of work required and file action plan with OEPA, if required.

Estimated initial OEPA filing by 10/1/93, if required

Phase B - Remediation activity and OEPA approval, if required, of final report

Project II - Remediation of Area Near Hole 8

Phase A - Delineate scope of work required, perform feasibility studies and file action plan with OEPA, if required.

Estimated initial OEPA filing by 3/1/94, if required

Phase B - Remediation activity, verification tests and OEPA approval, if required, of final report

Project III - New Pretreatment System and Lagoon Remediation

Phase A - Process water pretreatment system

Task I - Delineate scope of work required, develop system concept, design system and file request for permit to install

Estimated initial OEPA filing by 12/1/93

Task II- Construct system pursuant to permit to install

Phase B*- Remediation of lagoons 1 and 2

Task I - Remove and properly dispose of oil emulsions

Task II- Determine volume and character of affected materials, perform feasibility studies and file action plan with OEPA, if required

Estimated initial OEPA filing by 3/1/94, if required

Task III-Remediation activity, verification tests and OEPA approval of final report

*May be combined and integrated with Phase A as part of the process water pretreatment system and the permit to install.

3/31/93

2(6) (3) Keith

REVISED DRAFT

Subject: Progress Report---Canton Drop Forge
Audit Action Plan

Following is a progress report on each of the three projects described in the March 31, 1993 Canton Drop Forge Audit Action Plan, a copy of which is attached.

Project I - PCB Remediation

The plan was to complete soil tests, specify scope, prepare a remediation action plan and file that plan (if required) with OEPA by October 1. Actual remediation activity was to occur after receiving OEPA approval of the plan (if required) at an unspecified time.

After detailed consultations with Hammontree & Associates, R&R International and Day, Ketterer, plus individual inquiries elsewhere, plans for PCB remediation have been abandoned. The final decision on that matter followed verification that regulations would permit us to use refill soil containing higher levels of PCB than the very low PCB levels in the "contaminated" soil we might remove.

It is our intention that no further action be taken with respect to Project I.

Project II - Remediation of Area Near Hole 8

No work has yet begun on this project because of the higher (time) priority for Projects I and III and limitations on present cash availability and technical personnel at CDF. Phase A of the project, i.e. to delineate scope of work, perform feasibility studies and file an action plan with OEPA (if required) will most likely be completed by June 1, 1994, three months beyond the original target date. Phase B remediation activity should then begin during the third quarter of 1994.

Project III - New Pre-treatment System and Lagoon Remediation

Phase A (Task I) was started in May, with most subsequent effort focused on three subtasks: I (a) measurement of volumes of oil/water effluents generated from plant operations; I (b) analyses to identify effluent constituents and I (c) selection of and quotations from producers or designers of pre-treatment equipment.

Subtask I (a), conducted almost entirely by CDF personnel (no cost to the escrow account for CDF personnel), proved to be more complicated and time consuming than expected, because of the multiplicity of discharge points and the highly variable (hour-to-hour and day-to-day) volumes emitted. Those measurements were completed last week.

Subtask I (b) was therefore delayed until truly representative samples were available for analyses. Samples will be submitted to the testing lab this week with feedback expected by October 18. Those analyses will be used by producers/designers in determining whether mechanical separation (alone) will be sufficient and to determine whether the output of the new system will be acceptable by the city of Massillon water treatment system.

Subtask I (c) began in July with initial screening of designers or producers of pretreatment systems. Effluent volume data will be sent to at least three of these firms next week and constituent analyses will be sent after October 18. They will be asked for preliminary concept proposals and quotations, to be received by December 15. Detailed site investigations and discussions with Massillon will take place between December 15 and February 1, followed by submission of final designs and quotations.

The target date for design completion and filing for permits has been revised to April 1, 1994.

Phase B (Task I) of this project involving remediation of two lagoons is progressing on schedule with removal from the site of 16,000 gallons of oil/water emulsions within the last three weeks. Regular removals of such emulsions from lagoon 1 are ongoing. Another 30,000 gallons should be collected and removed before cold weather intercedes. Collections will resume in the spring.

Phase B (Task II) is an integral part of Phase A, Task I. Since it is now evident that more CDF technical and administrative man-hours will be required than had been anticipated, the target date for completion of a remediation action plan for the lagoons and filing for approval has been revised to July 1, 1994. Most of the effort and costs incurred to date for Project III have been for time spent by CDF personnel.



2(b), 3, 7, 1(c)

TO: J. P. Bressanelli

March 16, 1995

FROM: W. K. Cordier

SUBJECT: Quarterly and Semi-annual Audit Action Plan Reports

An internal quarterly report on progress against the Audit Action Plan is due by March 31. We are also obligated to submit a semi-annual report to the CEI Group on progress against the Plan before March 31.

Please refer to the attached Audit Action Plan report of September 30, 1994 as a guide and prepare a draft report for my review on March 22. If you should get it finished before March 22, go ahead and send a draft copy to Rick Zollinger.

WKC

WKC:mp

Enclosure

cc: WDPrice

FHZollinger

CANTON DROP FORGE, AUDIT ACTION PLAN

SEPTEMBER 30, 1994 PROGRESS REPORT

Following is a progress report on each of the three projects described in the March 31, 1993 Canton Drop Forge Audit Action Plan.

Project I -PCB Remediation

The plan was to complete soil tests, specify scope, prepare a remediation action plan and file that plan (if required) with OEPA. Actual remediation activity was to occur after receiving OEPA approval of the plan.

After detailed consultation with Hammontree & Associates, R&R International and Day, Ketterer, plus individual inquiries elsewhere, plans for PCB remediation were abandoned. That decision followed verification that regulations would permit use of refill soil containing higher levels of PCB than the very low PCB levels in the "contaminated" soil to be removed.

No further action contemplated on Project I.

Project II -Remediation of Area Near Hole 8

Commencement of this project has been rescheduled for March, 1995, so that CDF technical personnel can focus on the (now more complex than envisioned) work of Project III (see below). Phase A of this project, to delineate scope of work, perform feasibility studies and file an action plan with OEPA (if required), should be completed by June 30, 1995. Phase B remediation activity should then begin in August, 1995.

Project III -Pretreatment System/Lagoon Remediation

Phase A, Task 1 of this project, comprising three subtasks, is for delineation of scope, concept development, final design and permitting of a new process water pretreatment system.

Subtask (1a), for determining and/or estimating effluent flow rates proved to be even more complicated than was reported in March, when it appeared the subtask was completed. Sources of oil-containing water appear to be more numerous than those previously identified. Unless the system designers, Floyd Browne Associates, (see Subtask 1c) should discover still further sources as they complete their design work, this Subtask (a) is completed.

Project III -Pretreatment System/Lagoon Remediation (cont'd.)

Phase A, Task 1 (cont'd.)

Subtask (1b), for analyses and determination of constituents of effluents and surface emulsions from Lagoon 1 is also essentially completed (see Phase B, Task 1). The only problem constituents appear to be oil/grease and residues (suspended solids). Extraction and analyses of samples from the lagoon bottoms (see Phase B, Task 2) will begin as soon as the surface of Lagoon 1 is sufficiently free of surface emulsions to permit access to and proper removal of bottom samples.

Subtask (1c) is for selection of potential designers of (and equipment producers for) the pretreatment system, obtaining their quotations, selecting the preferred designer, agreeing on a final design and filing for a permit to install. Preliminary concepts and quotes were received from three designers and three equipment producers. Floyd Browne Associates was selected as the designer in May. During meetings with Floyd Browne in September, six alternative system concept designs were presented, including some which CDF believed to be more extensive (and expensive) than necessary. After completing revisions, the engineer and CDF selected one system concept for more refined cost estimates and if accepted by CDF, final detailed design (see Task 2 below). This subtask should be complete, to the point of filing for an installation permit, by year end.

The Massillon water department has not yet indicated willingness to receive "clean" discharge from CDF's ultimate pretreatment system, thereby increasing the likelihood of long term (clean) discharge into the lagoons.

Phase A - Task 2 is for construction and installation of the pretreatment system. Based on the September meetings, Floyd Browne is refining cost estimates and design details for the chosen system concept involving four individual separators to handle the three major contaminating sources and its seven different, widely separated discharge lines. Design details and costing for this system will be sufficient by late October to permit specification of equipment and final costing of components. Assuming that OEPA will require six weeks to review and issue a permit, construction should begin in February with installation complete by July 1995.

Project III -Pretreatment System/Lagoon Remediation (cont'd.)

Phase B - Task 1 for removal and proper disposal of emulsions from the two lagoons was interrupted by cold weather after removal of over 30,000 gallons from Lagoon 1, by CDF personnel (whose personnel costs are fully borne by CDF). Pumping was resumed via a 100 gpm pump located near Lagoon 1. A total of 113,000 gallons of oil/water mixtures have now been removed. Because those mixtures are becoming increasingly thinner (i.e., contain more water), the pump was modified and a water separator was employed (rented) in an attempt to "thicken" the emulsion removed to provide for efficient handling and affordable disposal. Because the separator was ineffective, the rate of pumping has been slowed and absorbent booms are in place to minimize the amount of water in the extracted emulsions. This task should be completed before November.

Phase B - Task 2, to determine volumes and character of affected materials in the lagoons was also impeded by cold weather and the resultant delay in extracting bottom samples. Three proposals for extracting and analyzing those samples (from Lagoon 1) were received. Hammontree & Associates was selected and will begin extracting bottom samples when the lagoon surface is sufficiently free of emulsions, probably by mid-October. Chemical analyses of Lagoon 1 samples should be available before year end. A decision regarding the need for confirming samples from Lagoon 2 will be made in January or February of 1995.

This task also includes filing a remediation plan with OEPA, if required. That filing should be possible by March 31, 1995.

Phase B - Task 3, for actual remediation of Lagoons 1 and 2 which should begin in April or May of 1995.

In Phase B especially, actual man-hours of needed involvement of CDF technical personnel have far exceeded earlier estimates.

William K. Cordier, Chairman

Summary of Report - CDF Audit Action Plan at September 30, 1994

<u>PROJECT</u>	<u>STATUS</u>	<u>PHASE (TASK-SUBTASK)</u>	<u>STATUS</u>
I. <u>PCB Remediation</u>	Apparently not needed		
II. <u>Remediation near Hole 8</u>	Rescheduled to permit focus of CDF personnel on Project III	A Scope, feasibility, file plan for OEPA approval	Start 3/1/95 Complete 6/30/95
		B Remediation	Start 8/1/95 Complete ?
III. <u>Pretreatment System and Lagoon Remediation</u>	Underway	A Pretreatment System	
		A (1a) Effluent flow rates	Completed
		A (1b) Analyze effluents and surface emulsions, (Lagoon 1)	Essentially completed
		A (1c) Quotes from potential system designers, selection, final design and costing, file for OEPA permit to install	Designer selected, preferred concept specified. Final design and costing due 12/31/95. File for permit then.
		A (2) Construct and install system	Start 2/15/95 Complete 6/30/95
		B Remediate Lagoons 1 and 2	
		B (1) Removal, disposal of emulsions	113,000 gal. removed from Lagoon 1. Completed by 11/1/94
		B (2) Determine volume, makeup of affected materials. Feasibility for remediation. File plan for OEPA approval.	Hammontree selected to extract, analyze bottom samples. Start 10/15/94, complete 2/1/95 (Lagoon 1), confirming samples from Lagoon 2? File plan with OEPA 3/31/95
		B (3) Remediation	Start 5/1/95 Complete ?

CANTON DROP FORGE, INC.

Miscellaneous Status Reports

Remediation

We have Floyd Browne Associates' final proposals for the process water pretreatment system, which Hammontree is critiquing at our request. Cost will be between \$200,000 and \$250,000. Soil samples from the bottom of Lagoons 1 and 2 show no contaminants other than petroleum hydrocarbons. Hammontree has proposals from three remediation specialists and will give us their proposal for lagoon remediation within the month. Pretreatment system installation and lagoon remediation actions will begin ASAP. We have protested to the Escrow Agent about repeated delays in invoice processing caused by CEI objections and believe the agent will correct that situation.

Huth Oil and Summit National Clean-ups

No new developments.

OEPA

After additional meetings with OEPA to resolve a number of issues, they decided CDF would not need a permit for forge shop emissions until Title V permits are required, probably next year. They approved the permit to install a rotary furnace for blade performing and they agreed that no permit is required for the new heat treat furnace. Our explanation that excessive oil in steam discharge was exaggerated by malfunction of a control valve was accepted. One outstanding issue, boiler operation and types of fuels permitted, has not been resolved.

China Project

Shanghai Turbine Works (STW) was pleased with the quality of CDF's third shipment. Final release on the initial order is at our outside machining source: those blades should be ready to ship to STW in March or early April. We have intentionally delayed quoting on another 800 blade forgings until manufacturing costs of the last group have been compiled. Harbin Turbine Works and Dongfang Turbine Works, the other two large steam turbine manufacturers in China, also want us to quote on large blades.

-2-

Capital ProjectsComputer-controlled Press/Manipulator

Much progress on installation of components and design/construction of the control system for the press and manipulator. Hardware design is complete with assembly of the control cabinet and console almost done. The AC portion of the system has been tested satisfactorily but the DC portion, delayed by the supplier, will arrive next week. Software planning is virtually finished and its design is 60 percent complete. The control room should arrive in late February. The press starter has arrived and the hydraulic tank and pump are in place. Initial start-up of the press, about two weeks behind schedule, should occur in mid-March.

Rebuild of 35-1 Hammer

Cracks observed while machining the anvil were extensive. One was more than a foot in depth and is believed to extend to the spongy shrink cavity of this massive casting. That crack was scarfed out and repaired with a soft overlay, the other cracks were welded and the anvil's top section was stress-relieved in place. Anvil grinding and machining will occur in the next several weeks. All other hammer components have been welded and machined or purchased and are ready to install. Final schedule for completion awaits repair of the anvil.

Continuous Heat Treat Furnace

A permit will not now be needed for this furnace. It is in place, undergoing repair of the refractory lining. New controls are being purchased.

The type of track and trays to be used through the furnace is under study, as they have significant cost and part handling implications.

Hydro-tel

A used hydro-tel has been purchased, installed and is in use, giving the die department needed additional capacity. It is virtually identical to CDF's largest hydro-tel but is in better condition. The actual project cost was within the \$20,000 estimate.

IMIS

The IMIS system continues to track jobs through the shop on-line to enhance monitoring of job status. Detailed variance cost reports have been developed which show performance by operation on each shop order. All heat treat procedures which have been developed to date are now in the system, with others being added when ready.

1(c)

1

PROJECT I -

NO CHANGE

PROJECT II -

COMMENCEMENT OF THIS PROJECT HAS

BEEN RESCHEDULED TO FOLLOW PROJECT III (SEE BELOW)

PHASE A OF THIS PROJECT, TO DETERMINE SCOPE OF

WORK, PERFORM FEASIBILITY STUDY AND FILE AN

ACTION PLAN WITH CEPA (IF REQUIRED), WILL

BEGIN AFTER THE LAGOON REMEDIATION PHASE

OF PROJECT III IS UNDERWAY. THE PHASE B

REMEDIATION ACTIVITY SHOULD THEN BEGIN

WITHIN 6 MONTHS AFTER THE START OF

PHASE A.

2(b), 1(c) 2

PROJECT III

PHASE A, TASK 1 - NO CHANGE

SUBTASK (1a), FOR DETERMINING AND/OR

ESTIMATING EFFLUENT FLOW RATES

IS COMPLETE.

SUBTASK (1b), FOR ANALYSIS AND DETERMINATION

OF CONSTITUENTS OF EFFLUENTS AND

SURFACE EMULSION? FROM LAGOON 1 IS

COMPLETE. ONLY A THIN LAYER OF THE

OIL/WATER EMULSION REMAINS ON THE

SURFACE OF LAGOON 1.

SUBTASK (1c), IS FOR THE INITIAL

DESIGN OF THE PRETREATMENT SYSTEM

AND FILING FOR A PERMIT TO

INSTALL. THE INITIAL DESIGN

OF THE PRETREATMENT SYSTEM

IS COMPLETE, INCLUDING COST

ESTIMATES FOR THE MATERIALS

AND INSTALLATION OF THE

THIS WORK WAS COMPLETED BY FBA ENVIRONMENTAL
COMPLETE SYSTEM, HAMMONTREE

AND ASSOCIATES HAS COMPLETED

TO REVIEW THE FBA ENVIRONMENTAL

REPORT FOR ACCURACY AND COMPLETENESS.

THIS REVIEW PROCESS IS COMPLETE.

THE INSTALLATION CONTRACTOR WILL

BE RESPONSIBLE FOR OBTAINING

THE REQUIRED PERMITS TO

INSTALL THE EQUIPMENT, HAMMONTREE

AND ASSOCIATES HAS COMPLETED

A BID DOCUMENT WHICH WILL
INSURE THAT ALL CONTRACTORS
WILL BE QUOTING UNIFORMLY.

THIS DOCUMENT WILL BE REVIEWED
AND SENT TO ^{FOUR} SUPPLIERS INCLUDING

HAMMOND PUMP AND ASSEMBLY CO.

FOR SUBMITTAL BY MARCH 31.

THE SYSTEM DESIGN CALLS FOR

RETAINING ALL EXISTING LAGOONS

FOR CONTROL OF PROCESS WATER AND STEAM
WATER,

PHASE A - TASK 2 IS FOR CONSTRUCTION

AND INSTALLATION OF THE PRETREATMENT

SYSTEM. THIS WILL BE IN DIRECTLY

FOLLOWING THE ACCEPTANCE OF
ONE OF THE BIDS OBTAINED UNDER
PROJECT III, PHASE A, TASK 1, ~~START~~ IS
A MAY 15TH START DATE SHOULD
BE ALLOWED INCLUDING 3 WEEKS
FOR BIDDING AND 3 WEEKS FOR
MOBILIZATION.

PHASE B - TASK 1 FOR ~~REMOVAL OF~~
PROPER DISPOSAL OF EMULSION)

FROM THE TWO LAGOONS IS

NEARLY COMPLETE. LESS THAN ONE

INCH OF MATERIAL REMAINS ON

LAGOON 1. THIS WILL BE ADDRESSED

WITHIN THE NEXT 4 WEEKS.

PHASE B TASK 2, TO DETERMINE VOLUME
AND CHARACTER OF AFFECTED MATERIALS
IN LAGOONS 1 AND 2 IS COMPLETE.

HAMMONTREE AND ASSOCIATES REMOVED

SAMPLES, DETERMINED THE CONTOUR OF

THE BOTTOM LAYERS OF SLUDGE,

MEASURED THE DEPTH OF SLUDGE,

AND SENT SAMPLES OF THE SLUDGE TO

ONE LABORATORY AND THREE OTHER ANALYTICAL

FIRMS. LATER, RESULTS WERE

SENT TO STATE DEPARTMENT

FIRMS AND TWO LAND FILLS FOR

DISPOSAL ESTIMATES. A REEVALUATION

THE 100% REMEDIATION IN LAGOON 1

"LAGOON" SLUDGE REMOVAL

CDF005175

OPTIONS IS NOW BEING REVIEWED

7. IDF P-2. A similar

REPORT ON LAGUN 2 IS FORTHCOMING

THE LAGOON 1
BASIS OF A REPORT TWO ESTIMATED

COMPANIES

INVITED TO PREPARE PRECISE DETERMINATION

OF THE LAGOON 1

PHASE B - TASK 3 FOR THE LAGOON 1

OF LAGOON 1 IN THE W. THE IS DETERMINED

AFTER PHASE A - TASK 2 IS UNDER WAY

PHASE B - TASK 3 FOR THE LAGOON 1



Jerry

Per Phone con with Larry Phillips

Estimated Times - Pretreatment

30 days for contractors to respond

30 days after bids are open and
contractors selected we would
sign contract.

10 days after contract is signed
contractor will begin work

9 months to complete work
" " because equipment lead
time could be longer.

actual on-site work may be
only 60 days.

EPA Permit - ask Rick
City " - No
Elchua " - Maybe

CDF005177

Lagoon #2 Report due Thurs
3/30

J. CURTISS & ASSOCIATES
524 Parkway View Drive
Pittsburgh, PA 15205
Phone: 412/788-1550
Fax: 412/788-1555

2(b), 3(b)

SUMMARY OF REPORT - CDF AUDIT ACTION PLAN AT MARCH 31, 1995

<u>PROJECT</u>	<u>PHASE (TASK-SUBTASK)</u>	<u>STATUS</u>
I. <u>PCB Remediation</u>		Apparently not needed. Complete.
II. <u>Remediation near Hole 8</u>	A. Scope, feasibility, file plan for OEPA approval	Rescheduled to permit focus of CDF personnel on Project III Will begin after Proj. III is underway. Estimated start 8/95 Complete 11/95
	B. Remediation	Estimated start 4/96. Complete ?
III. <u>Pretreatment System and Lagoon Remediation</u>	A. Pretreatment System	
	A(1a) Effluent flow rates	Completed
	A(1b) Analyze effluents and surface emulsions	Completed
	A(1c) Final system design, quotes from builders, file for OEPA permit to install 30 days to respond	Design complete Bid specification developed. RFQ's sent. Builder to be selected by 5/95. Permits filed by 6/95.
	A(2) Construct and install system	Start 7/95 and complete by 1/96, assuming no permit delay
	B. Remediate Lagoons 1 & 2	
	B(1) Removal, disposal of emulsions	Only thin layer of emulsion remains. Will complete after separa- tion system operational - 4/96
	B(2) Determine volume, makeup of affected materials. Feasibility for remediation. File plan with OEPA for approval	Characterization of material completed, estimates of volume completed. Review of remediation alternative underway, to be complete by 9/95. File plan with OEPA by 11/95.

NO PERMIT
ASK RICK EPA
NO CITY PERMIT
10 DAYS AFTER NOTICE
TO PROCEED
START TO COMPLETE
6-9 MONTHS
60 DAYS CONSTRUCTION
LAGOON #2 REPORT
THURSDAY

NO

SUMMARY OF REPORT - CDF AUDIT ACTION PLAN AT MARCH 31, 1995

<u>PROJECT</u>	<u>PHASE (TASK-SUBTASK)</u>	<u>STATUS</u>
III. <u>Pretreatment System</u> <u>and Lagoon Remediation</u> (continued)	B(3) Remediation	Remediation can not begin until oil separation system functional, remnant emulsion removed, Lagoon 1 drained, and pretreated water diverted to Lagoon 2. Start 5/96. Complete ?

110

10/8/93

PHONE CON ERIC KENNEY (HUDSON ISLAND)
MEETING SET FOR 10/11/93 AT 10AM

10/8/93

ENVIRONMENTAL, PAUL JACOBS, VISIT
LOOKED AT POND. HE WILL GET
BACK TO ME WITH \$ TO
PUMP & HAUL TO RESEARCH
PUMP & DUMP TO " TRUCK
PUMP TO AID " TRUCK
CONSIDER SKIMMER BASIN TO
PUMP FROM
HE CAN PUMP TO 30" OF H₂O

10/11

VISIT - ERIC KENNEY, JEFF CASE
HUDSON ISLAND - WILL SEND INFO ON
\$ & PRINT FOR SEPARATION
100 CPM & 200 CPM
W & W/O PUMPING STATION
\$ & TIME
FOR SKIMMER & PUMP RENTAL
FOR CLEANING POND

1-487-0668
PER ERIC KENNEY, HUDSON 10/14
100 GPM, ROTARY GEAR PUMP,
2" DISCHARGE, 3Ø, 220 VOLT,
SKIMMER, \$245/WK, 1 1/2 WK DELIVERY
NO WORK, NO PAY
QUOTE TO BE HERE IN AM

KELLER HALL INC TO QUOTE ON
SEPARATOR DESIGN & INSTALLATION
RUSSELL LEONARD 633-6160

WASTE WATER TECHNOLOGIES
BOB AELAS 595-9114
SKIMMERS, SEPARATORS, ULTRAFILTRATION

HIGHLAND TANK 11/18/83
SEPARATOR QUOTE \$10,000
W/ COALESCER

Keller-Hall Inc. 11/15/83
CONFIRMED WORK ON SEPARATOR
ETC W/ OUTSIDE ENGINEER

Hudson Env.

12/1/93

Pump is on BACK ORDER

" " DUE IN ~~21~~ 215 WEEKS

ERIC CAME IN & GOT A SAMPLE

Hammontronc

12/3

\$17,400 - PRELIMINARY DESIGN QUOTE

US Automation

VISIT, JOHN MICHALUK, TO
QUOTE ON DESIGN (KOLLE)

Hammontronc 12/16/93

- SAMPLED STORM SEWER LINE

BY SAN DEPT. FLATTED ENTRANCE
& DRAIN LINE FROM MAIN SEPARATOR

MAIN SEPARATOR FLOW

1 GAL / MIN TO SEWER BY SAN DEPT

20 GAL / 210 min = 1 GAL / min

Hudson Industries 12/21/93
PUMP ARRIVED SET CLOSE TO
TOWN LEVEL & 5' LIFT
440V HOOKED UP TO NIGHTS
THEY WILL DRINK HOSE 12/22/93
FOR DISCHARGE.

MICHALEK & ASSOCIATES 1/4/94
QUOTE 94-010494
RE-ROUTE PIPING \$3,345.00
OIL SEPARATOR \$6,000.00

EAST OTHO MACIT 2/7/94
IN TO REVIEW SEPARATOR PROBLEMS

HAMMON PRO 2/7/94
IN TO REVIEW SEPARATOR PROBLEMS
LARRY PHILLIPS

FLOYD BROWNE ASSOC. 3/18/94
REVIEW SEPARATOR PROBLEMS
DAVID STEWART
CHARLES HALL
SAME CO. AS AQUA TENT

FLOYD BROWN to come in TUES
6/28/94 TO SURVEY
6/29 FOR MEETING ON
NEW SEP. SYSTEM

Hudson
OK Remove 6/12 - 6/25
Hudson
OK Remove 6/26 - 7/2

Hudson
OK TO PURCHASE - Pump/Skimmer
L. Phillips
OK to PURCHASE - Pump/Skimmer

J. Bressanelli 7/14/94
HELPED HIM UPDATE INFO TO
THE BOARD OF DIRECTORS

FLOYD BROWN 8/3/94
DRAWING TO BE IN MAIL 8/4
WILL DISCUSS & CALL ME BACK WITH
PLAN FOR THE CHECKING LINES
PER RANDY

Week of 5/30

PIPE FITTING TOTAL 10 hr

Week of 6/6

MADE SURVEYS 6 hr

Pump Oil off #1 LAGOON 4 hr

Week of 6/20

REPLACE/INSTALL 2 1/2 VALVE 2 hr

6/28 R. KENDRICK 7 hours

PUMPING OIL OFF #1 LAGOON

6/29 R. KENDRICK 5 HOURS

PUMPING OIL OFF #1 LAGOON

7/1 R. Kendrick 4 HOURS

PUMPING OIL OFF #1 LAGOON

7/12 R. Kendrick 3 HOURS

PUMPING OIL OFF #1 LAGOON

7/14 R. Kendrick 2 HOURS

PUMPING OIL OFF #1 LAGOON

8/17 R. KENDRICK 4 HOURS

8/19 ^{INSTALL SEPARATOR} R. KENDRICK 2 HOURS

8/22 ^{INSTALL SEPARATOR} R. KENDRICK 2 HOURS

8/23 ^{OPERATE SEPARATOR} R. KENDRICK 3 HOURS

8/25 Cecil (electrician) 2 HOURS
^{INSTALL/OPERATE SEPARATOR}

8/28 R. KENDRICK 1 HOUR

8/30 R. KENDRICK 2 HOURS
SEPARATOR TR. A.S.

BILL C SAYS TIME CAN'T
BE CHARGED TO ESCROW
ACCOUNT

R. JAMES HAMMONTREE, P.E., P.S.
BRUCE M. BAIR, P.E., P.S.
LAWRENCE D. PHILLIPS, P.E., P.S.
CHARLES F. HAMMONTREE, P.E., P.S.
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KEITH A. BENNETT, P.E., P.S.
BARBARA H. BENNETT, P.E., P.S.

HAMMONTREE & ASSOCIATES, LIMITED

Consulting Engineers - Planners - Surveyors

TREEMORE BUILDING
5233 STONEHAM ROAD
NORTH CANTON, OHIO 44720

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TOLL FREE 1-800-394-8817

3(6), 1(c), 5
MICHAEL L. DECKER, P.S.
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GREGORY E. MENCER, A.P.A.
DANIEL J. GRINSTEAD, P.E.
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THOMAS J. KING, P.S.
DOMINIC A. MARTUCCIO, P.E., P.S.
PAUL A. MILLER, P.S.

MEETING MINUTES

CANTON DROP FORGE - INDUSTRIAL PRETREATMENT

June 26, 1995

10:00 a.m.

Attendees: Tom Greve (Bowen)
Harald Jacobsen (FBA)
Keith Houseknecht (CDF)
Rick Zollinger (CDF Legal Rep.)
Larry Phillips (H&A)
Gene Hill (H&A)

Key Points:

1. Pilot study required (particularly for emulsified oil streams).
2. Yard separator does not appear to pose a problem. It should be easy to get less than 100 mg/l of oil and grease (<50 mg/l very likely).
3. FBA and Bowen intend to route small steam line from the blacksmith's anvil to the steam/oil separators.
4. Some cost cutting may be possible pending the results of the pilot study.
5. The estimated cost currently stands at roughly \$400,000 with \$50,000 for pilot study.
6. Low cost equipment may still be used.
7. The minimum efficiency for the Penn demister is 65% (for 3 micron oil particle).
8. If oil particles are 10 microns or larger the demister efficiency will be roughly 98%.
9. Little or no emulsified oils go to pond #1.

10. The condensate oil/water separator efficiency will be low unless "high tech" separators are used. These units would be very expensive and have significant O&M costs. Again the pilot study (\$50,000) would be required to verify this.
11. "Non-emulsifying" oils should be investigated by CDF.
12. It may be useful to install yard system while studying the emulsified waste stream for treatability.
13. According to Bowen the yard system could be completed in 3 months.
14. Bowen & FBA propose to use an above ground yard separator by pumping the water into the separator and allowing gravity flow to pond #2.
15. Bowen & FBA propose to use a coalescing oil/water separator for the yard separator. The unit will have 20 micron media and freeze protection.
16. The Penn demister would be mounted on a platform on the outside wall near the existing steam stack. Additional costs would be incurred for the freeze protection that FBA and Bowen felt necessary.

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RICHARD R. COOK, P.E., P.S.
CHARLES F. HAMMONTREE, P.E., P.S.
JAMES C. BOLLIBON, P.E., P.S.

2(6), 5, 1(e), 3(b), 1(c)

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PAUL A. TOMIC, P.S.
MARK E. FRANZEN, P.E.
KARL J. OPRISCH, P.E.
BARBARA H. BENNETT, P.E.

RECEIVED

February 7, 1995

FEB 8 1995

CANTON DROP FORGE

Canton Drop Forge
4575 Southway Street
P.O. Box 6902
Canton, Ohio 44706-0902

Attention: Keith Houseknecht

Dear Mr. Houseknecht:

Hammontree & Associates, Limited has reviewed the Oil/Water Separation Design Report (October 1994) which was submitted to Canton Drop Forge by FBA Environmental. The general design and layout of the proposed system appears to be sound and workable yet there are a few items which should be clarified or addressed.

The following is a list of comments which Hammontree & Associates has developed during the review process:

1. Canton Drop Forge may wish to maintain the ability to discharge the "yard" O/W separator back into Pond one (1). Small piping changes would make this option possible.
2. There is no apparent reason to double pump from Pond one (1) to Pond two (2). The sump pump in the press room can easily be by-passed. We understand this sump may already be by passed. There should be a separate force main from the separator at the south end of the Forge Shop to the storm sewers draining into Lagoon #2. Have you considered discharging by gravity into Lagoon #1? We expect Lagoon #1 to continue to receive storm water discharges.
3. Should the drain in the oil house be connected to the 6" PVC pipe which ties into the "yard" O/W separator?

RECEIVED

FEB 8 1995

Mr. Keith Houseknecht
February 7, 1995
Page 2

FOR DROP FORGE

4. Has testing been done to verify the suitability of the proposed units to treat the effluent? Either perform pilot testing or treatability studies for properties of the effluent to determine O/W separator applicability. There was no manufacturer's data supplied. Chemical and physical properties of the effluent may effect separator efficiency.
5. What are the O&M costs associated with the proposed units? Expected useful life?
6. Can the units be modified for other effluents?
7. The Oil/Water separator north of the saw department is in front of a door to building "C". Is there sufficient room for installation?
8. The report should correct pond identification numbers.
9. Is 120 gpm sufficient to handle peak flows from the Forge Shop building "C"? Sizing was not discussed for the north end of the Forge Shop.
10. Will there be separate slop oil storage tanks? What sizes are expected?
11. Does the sump in the basement of the boiler house receive any oil?
12. The oils condensate drain from the hot process softener should be treated prior to discharge to Pond #2 (Plate #1) (Okay on Plate #4).
13. The steam separator at the north end of the Forge Shop should be attached either to the building or stand alone. The stand by "Anvil" will be removed to another location.
14. Do the three lines to Pond one (1) on Plate four (4) represent the "Die Lube", "Steam Line" and "Surface Drainage" discharging to the south and west of the Forge Shop?

Respectfully,

HAMMONTREE & ASSOCIATES, LIMITED

Gene G. Hill

Gene G. Hill, E.I.T., M.S.

110

ENVIRONMENTAL

NHS IN PITTSBURGH

DOSEW BUILD ?

~~NOTE~~

ERM - Standing over Columbus

WAG MEASURED

FOR 10 PPM

FOR 15 PPM

Let's finish up to write 300-1-100
Can Larry Phillips

INT. IN BIDDING

W.W. ENGINEERING & SCIENCE

A Summit Co

At

BETSEY J. THOMPSON

2660 BUSH BOULEVARD

COLUMBUS OH 43229

(614) 847-6008

For

847-5563

2(b), 1(c)

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FEB 8 1995

FORGE

Mr. Keith Houseknecht
February 7, 1995
Page 2

4. Has testing been done to verify the suitability of the proposed units to treat the effluent? Either perform pilot testing or treatability studies for properties of the effluent to determine O/W separator applicability. There was no manufacturer's data supplied. Chemical and physical properties of the effluent may effect separator efficiency. X
5. What are the O&M costs associated with the proposed units? Expected useful life?
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Respectfully,

HAMMONTREE & ASSOCIATES, LIMITED

Gene G. Hill

Gene G. Hill, E.I.T., M.S.

TERC JERRY
Reference in initial survey

Specific Comments
STOP

Willing to Wait
10:15 PM
to Pond

R. JAMES HAMMONTREE, P.E., P.S.
BRUCE M. SAIR, P.E., P.S.
LAWRENCE D. PHILLIPS, P.E., P.S.
RONALD P. DOHY, P.S.
GARY L. TOUSSANT, P.S.
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RICHARD R. COOK, P.E., P.S.
CHARLES F. HAMMONTREE, P.E., P.S.
JAMES C. BOLLIBON, P.E., P.S.

2(b), 5, 1(c), 3(b), 1(c)
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KARL J. OPRISCH, P.E.
BARBARA H. BENNETT, P.E.

RECEIVED

February 7, 1995

FEB 8 1995

CANTON DROP FORGE

Canton Drop Forge
4575 Southway Street
P.O. Box 6902
Canton, Ohio 44706-0902

Attention: Keith Houseknecht

Dear Mr. Houseknecht:

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3. Should the drain in the oil house be connected to the 6" PVC pipe which ties into the "yard" O/W separator? *Yes*

R. JAMES HAMMONTREE, P.E., P.S.
BRUCE M. BAIR, P.E., P.S.
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1(c), 2(b)

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THOMAS J. KING, P.S.
DOMINIC A. MARTUCCIO, P.E., P.S.
PAUL A. MILLER, P.S.

July 28, 1995

RECEIVED

JUL 31 1995

CANTON DROP FORGE

Mr. Keith Houseknect
Canton Drop Forge
4575 Southway Street
P. O. Box 6902
Canton, Ohio 44706-0902

Re: Design Proposal for Standpipe Foundation

Dear Mr. Houseknect:

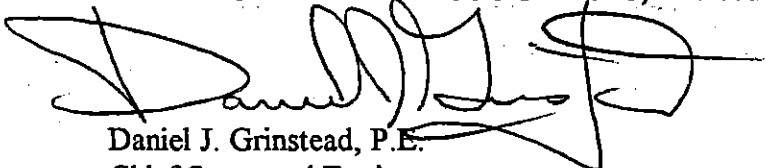
As you requested, I have reviewed the factors involved with the resupport of the standpipe in lagoon No. 1. We feel the conditions warrant the use of an oversized floating slab to support the structure. This type of slab should be placed under both the standpipe and the inlet pipes. Due to the uncertainty of the soil, we also recommend hiring the services of a Soils Engineer to evaluate the bearing capacity and settlement characteristics of the soil. We would also need measurements for the structure including the location of the inlet pipes with respect to the bottom of the standpipe. With this in mind, we are pleased to submit the following estimated design fee:

I. Structural design of floating foundation slab	
Estimated Fee	\$480.00
II. Design sketches showing dimensions and foundation details (submitted on 8-1/2 x 11 engineering paper).	
Estimated Fee	\$240.00
Total Estimated Fee	\$720.00

If you have any questions regarding this fee please do not hesitate to call me at your convenience.
I thank you for allowing our office to submit this proposal.

Sincerely,

HAMMONTREE & ASSOCIATES, LIMITED



Daniel J. Grinstead, P.E.
Chief Structural Engineer

1(c), 7, 2(b)

May 23, 1995

**SUMMARY OF THE REVIEW OF BIDS
CANTON DROP FORGE PROJECT #95-1
INDUSTRIAL PRETREATMENT**

The two bids received were reviewed for technical merit and construction costs. The obvious difference between the bids is the base bid cost. Workman Industrial bid \$260,101. Bowen Engineering Corporation and Floyd Browne & Associates (FBA) bid \$398,000. The technical differences appear to be largely responsible for the disparity between the bids.

Workman Industrial qualified their bid with the assumption that no emulsified oils existed. Bowen Engineering Corporation and FBA suspected the occurrence of emulsified oils due to past experience at Canton Drop Forge.

To allow for truly competitive bidding, samples of the plant discharge with potentially emulsified oils are being provided to each bidder. These "representative" samples shall be used by each bidder to determine the level of treatment which can be achieved by conventional technologies and the associated costs.

Bidders should be aware that higher discharge limits may be approved if the associated cost savings is substantial.

Once the bidders have had the opportunity to evaluate the removal of the "emulsified oils" and adjust their bids (if required), a meeting with each individual bidder shall be held to discuss their bid.

At the individual bid meetings the bidders shall be required to provide product data sheets and other materials as required to demonstrate the suitability of the chosen equipment. Operation and maintenance as well as cost will be important.

- HAMMONTREE & ASSOCIATES, LIMITED -

**CANTON DROP FORGE
CONTRACT #95-1
INDUSTRIAL PRETREATMENT
COMPARISON**

	<u>Workman</u>	<u>FBA</u>
1. Base Price	\$260,101	\$398,000
2. Qualifications		
a. 10 mg/l	Yes	?
b. Emulsified Oil (.95 Specific Gravity)	No	Yes
c. 200 GPM Separator	Add \$10,125	N/A
d. Assumes Gravity Feed from H.P.S.	Yes	N/A
e. Pilot Study	Included	Extra
f. OEPA PTI	?	Yes
3. Surety	Yes	No
4. Bid Bond	Yes	No
5. Non-Collusion Affidavit	Yes	Yes

Note: This comparison sheet will be filled out more completely once the bidders have the opportunity to examine the potentially emulsified oil/water stream and the individual interviews with Canton Drop Forge have occurred.

- HAMMONTREE & ASSOCIATES, LIMITED -



① Remediation of the lagoons will not have a direct effect on HOGS

② The proposed change order was sent out without CDF review.

③ Also

It was well known that the bio cell was not properly leveled

Several weeks after the cell was full I helped Jerry Coon find

YWC via Ed Green. Jerry C had a magazine article that contained info on the Brown Bear Auger-Aerator.

∴ He Jerry C could not have known that he would use an Auger-Aerator nor that debris would be a problem

Beaver was allowed to store high liquid mat'l together instead of mixing.

To my knowledge no bulking mat'l was added

Beaver was allowed to mix and dump mat'l randomly as opposed to placing large piles in one area.

Hydrogen Peroxide was set up but not used effectively. Jerry C decided (I think) that it was not needed. (No set procedure)

Bulking, Seeding, Testing & Turning has not occurred on a regular schedule (No set procedure)

J. CURTISS & ASSOCIATES
524 Parkway View Drive
Pittsburgh, PA 15205
Phone: 412/788-1550
Fax: 412/788-1555



- ④ Do we have a set procedure for approving & paying when CDF \$ are being spent? I assume much of the same approval process will be used.
- ⑤ I would rather have a set schedule for aeration, seeding, bulking, & testing, based on TCC's expert opinion, today. I don't think we will be pleased with the results if we rely on this statement for performance.
- ⑥ Initial TPH levels of CBL #1 is complete
Who pays for testing.
Who initiated testing.
One sample min. must come from area of excess liquid.
Who pays for ~~the~~ DHC DPO analysis?
- ⑦ Why not just sample now? It has been way over a month since the last sample.
- ⑧ What is 'the work'?
CBL #1 6/95 - 9/96
CBL #2 6/97 - 9/98
CBL #3 6/99 - 9/00
- ⑨ If in-stn - - - - 30000y, from Lagoon #1 and 9000 (should this be 6,000?) c.y. from Lagoon #2 - - - -

J. CURTISS & ASSOCIATES
524 Parkway View Drive
Pittsburgh, PA 15205
Phone: 412/788-1550
Fax: 412/788-1555

②g/B

*from critically review. Make changes,
additions etc where needed. Would
like this back ASAP.
Jim*

CANTON DROP FORGE, AUDIT ACTION PLAN

SEPTEMBER 30, 1995 PROGRESS REPORT

1(c), 2(b),
3(b)

Following is a progress report on each of the three projects described in the March 31, 1993 Canton Drop Forge Audit Action Plan.

Project I - PCB Remediation

The plan was to complete soil test, specify scope, prepare a remediation action plan and file that plan (if required) with OEPA. Actual remediation activity was to occur after receiving OEPA approval of the plan.

After detailed consultation with Hammontree & Associates, R&R International and Day, Ketterer, plus individual inquiries elsewhere, plans for PCB remediation were abandoned. That decision followed verification that regulations would permit use of refill soil containing higher levels of PCB than the very low PCB levels in the "contaminated" soil to be removed.

No further action contemplated on Project I.

Project II - Remediation of Area Near Hole 8

There has been no further action on this project, because CDF technical personnel and the external consultants have had to concentrate all of their attention on the (more complex than envisioned) work of Project III (see below).

Project III - Pretreatment System/Lagoon Remediation

Phase A - Task 1 of this project comprising three subtasks, is for delineation of scope, concept development, final design and permitting of a new process water pretreatment system.

Subtask (1a) for determining and/or estimating effluent flow rates is completed.

Subtask (1b) for analyses and determination of constituents of effluents and surface emulsions from lagoon 1 is also completed (see Phase B, Task 1). The only problem constituents found were oil/grease and residues (suspended solids).

Subtask (1c), is for selection of potential designers of (and equipment producers for) the pretreatment system, obtaining their quotations, selecting the preferred designer, agreeing on a final design and filing for a permit to install, if required.

Requests for quotes were sent to three potential builders of the pretreatment system and responses were received from two (FBA Environmental and Workman Industrial Services). Both bidders quoted two pretreatment systems--a yard separator to process discharge from the plant proper with forge shop as the major effluent source and a boiler house separator to handle discharge primarily from that source. Both bidders accepted the specified 10 PPM maximum oil content for treated discharge from the yard separator, but neither would accept nor, at this time, agree to a maximum oil content of treated effluent from the boiler house separator. Both agree that separating oil that is emulsified from spent steam condensate is extremely difficult and may require a complex system. Workman, the lower of the two bidders, was selected to install the yard separator (Phase A) and to work with us further in developing an effective, reasonably priced boiler house separator system (Phase B). A contract for \$130,000 was signed with Workman for Phase A and their work, to be completed by January 22, 1996 is underway. The contract specifies that Workman is responsible for all required permits, including those of the OEPA.

To assist in developing an appropriate boiler house separator system, we hired a consultant who was involved with a boiler house oil separation project at Wyman-Gordon, the largest forging company in the U.S. He is compiling information from that system for our review.

Complicating matters, OEPA has recently issued a tentative regulation limiting oil content of discharged water to 35 PPM. This level is readily attainable for pretreated discharge from the yard separator system, but is a serious concern, as indicated above, for pretreated effluent from the boiler house separator system.

The current system design calls for retention of all three existing lagoons for control of process water and steam condensate, because Massillon water department continues to be unwilling to accept the pretreated discharge.

Phase A - Task 2 is for construction and installation of the pretreatment system. As indicated above, Workman has been awarded a contract to install the yard separator system and their work on this system is now underway and will be completed by January 22, 1996. Construction of the boiler house separator system, has been delayed, pending resolution of several complex technical questions concerning possible process techniques and treatment levels attainable in removing emulsified oil from the steam condensate from the boiler house. Workman and an independent consultant are participating in this resolution, as indicated above.

Phase B - Task 1 for removal and proper disposal of emulsions from the surface of the two lagoons is complete.

Phase B - Task 2 to determine volume and character of affected materials in the lagoons is now complete.

Phase B - Task 3 for remediation of lagoons 1 and 2 is underway. A contract of \$222,500 was awarded to Critter Company, the lower of two bidders, for bioremediation of an assumed 9,000 cubic yards of sludge and oil contaminated soil from the two lagoons. Thus far, lagoon 1 has been emptied of oil, water and contaminated soil and any residual material in the cavity is being bioremediated in situ. Contaminated soil from the cavity was transported to another location on CDF property where it is being bioremediated. Critter guarantees that treated soil will contain less than 300 PPM of hydrocarbons, a threshold level used by Fire Marshals in assessing contamination from underground storage tanks. The process will take up to 18 months.

While lagoon 1 is being remediated, lagoon 2 is being used as the receptacle for process water discharge. Therefore, bioremediation of lagoon 2 will be delayed until the yard and the boiler house separator systems have been installed and bioremediation of the banks and contaminated soils of lagoon 1 has been completed.

1(c), 2(b), 3(b)
6

CANTON DROP FORGE, AUDIT ACTION PLAN

MARCH 31, 1995 PROGRESS REPORT

Following is a progress report on each of the three projects described in the March 31, 1993 Canton Drop Forge Audit Action Plan.

Project I - PCB Remediation

The plan was to complete soil tests, specify scope, prepare a remediation action plan and file that plan (if required) with OEPA. Actual remediation activity was to occur after receiving OEPA approval of the plan.

As indicated in the last report, no further action is contemplated on Project I.

Project II - Remediation of Area Near Hole 8

Commencement of this project has been rescheduled to follow Project III (see below).

Phase A of this project, to delineate the scope of work, perform feasibility studies and file an action plan with OEPA (if required), will begin once the lagoon remediation phase of Project III is underway.

Phase B remediation activity will begin within 6 months after the start of Phase A, weather permitting.

Project III - Pretreatment System/Lagoon Remediation

Phase A, Task 1 of this project, comprising three subtasks, is for delineation of scope, concept development, final design and permitting of a new process water pretreatment system.

Subtask 1(a), for determining and/or estimating efficient flow rates is complete.

Subtask 1(b), for analysis and determination of constituents of effluents and surface emulsions from lagoon 1 is complete.

Subtask 1(c), is for selection of potential designers of (and equipment producers for) the pretreatment system, obtaining their quotations, selecting the preferred designer, agreeing on a final design and filing for a permit to install. The initial design of the pretreatment is complete, including cost estimates for the materials and installation of the complete system. Hammontree

and Associates was retained to review the design, prepared by FBA Environmental, for adequacy, acceptability and efficiency. Their review is complete and they conclude that the system design should meet CDF's needs. At our request, Hammontree also prepared a bid specification document to insure that potential system builders all quote uniformly on a consistent, specific system. This document has been reviewed and found acceptable. Requests for quotes have been sent to three potential builders including Hammontree and FBA Environmental. The bid document requires the system builder be responsible for all required permits, including those of the OEPA.

The current system design calls for retention of all three existing lagoons for control of process water and steam condensate, because Massillon water department continues to be unwilling to accept the pretreated discharge.

Phase A - Task 2 is for construction and installation of the pretreatment system. This phase will begin directly following acceptance of the quote of one of the bids, discussed under Project III, Phase A, Task 1, Subtask 1(c). Construction should begin by May 15, 1995, assuming three weeks for receipt of quotes and selection of the builder and three weeks for the builder to initiate construction efforts.

Phase B - Task 1 for removal and proper disposal of emulsions from the two lagoons is nearly complete. Less than one inch of emulsion remains on Lagoon 1 and Lagoon 2 is routinely skimmed. This phase will continue, but at a reduced level, until the new oil separation system is installed and is operational.

Phase B - Task 2 to determine volumes and character of affected materials in the lagoons is complete. Soil samples from the bottoms of Lagoons 1 and 2 show no contaminants other than petroleum hydrocarbons. In addition to removing samples and analyzing them, Hammontree determined the contour of the bottom layers of sludge, measured its thicknesses and sent samples to one laboratory and three bioremediation firms. Laboratory results were also sent to the three bioremediation firms, and also two land fills for cost estimates of remediation or disposal. Hammontree recently issued a report of the work on Lagoon 1 and the report is now being reviewed within CDF. A similar report of work on Lagoon 2 will be issued within three weeks. Based on the report on Lagoon 1, two bioremediation firms have been interviewed and they have been asked to prepare precise quotes and plans for our review.

Phase B - Task 3 for actual remediation of Lagoons 1 and 2 will begin directly after Phase A - Task 2 is underway, as requested by the former shareholders.

1(c), 2(b)

SUMMARY OF REPORT - CDF AUDIT ACTION PLAN AT MARCH 31, 1995

<u>PROJECT</u>	<u>PHASE (TASK-SUBTASK)</u>	<u>STATUS</u>
I. <u>PCB Remediation</u>		Apparently not needed. Complete.
II. <u>Remediation near Hole 8</u>	A. Scope, feasibility, file plan for OEPA approval	Rescheduled to permit focus of CDF personnel on Project III Will begin after Proj. III is underway. Estimated start 8/95 Complete 11/95
	B. Remediation	Estimated start 4/96. Complete ?
III. <u>Pretreatment System and Lagoon Remediation</u>	A. Pretreatment System	
	A(1a) Effluent flow rates	Completed
	A(1b) Analyze effluents and surface emulsions	Completed
	A(1c) Final system design, quotes from builders, file for OEPA permit to install	Design complete Bid specification developed. RFQ's sent. Builder to be selected by 5/95. Permits filed by 6/95.
	A(2) Construct and install system	Start 7/95 and complete by 1/96, assuming no permit delay.
	B. Remediate Lagoons 1 & 2	
	B(1) Removal, disposal of emulsions	Only thin layer of emulsion remains. Will complete by 7/95.
	B(2) Determine volume, makeup of affected materials. Feasibility for remediation. File plan with OEPA for approval	Characterization of material completed, estimates of volume completed. Remediation alternatives reviewed, bioremediation selected --firm to be selected by 7/95. Decision whether OEPA required by 7/95.

SUMMARY OF REPORT - CDF AUDIT ACTION PLAN AT MARCH 31, 1995

<u>PROJECT</u>	<u>PHASE (TASK-SUBTASK)</u>	<u>STATUS</u>
III. <u>Pretreatment System</u> <u>and Lagoon Remediation</u> (continued)	B(3) Remediation	Remediation may be delayed until separation system functional, remnant emulsion removed, Lagoon 1 drained. May start as late as 5/96 if operational separation system required. Complete ?

CANTON DROP FORGE, AUDIT ACTION PLANMARCH 30, 1994 PROGRESS REPORT (c), 7, 2(b)

Following is a progress report on each of the three projects described in the March 31, 1993 Canton Drop Forge Audit Action Plan.

Project I - PCB Remediation

NO CHANGE

The plan was to complete soil tests, specify scope, prepare a remediation action plan and file that plan (if required) with OEPA by October 1. Actual remediation activity was to occur after receiving OEPA approval of the plan (if required) at an unspecified time.

After detailed consultation with Hammontree & Associates, R&R International and Day, Ketterer, plus individual inquiries elsewhere, plans for PCB remediation have been abandoned. The final decision on that matter followed verification that regulations would permit us to use refill soil containing higher levels of PCB than the very low PCB levels in the "contaminated" soil we might remove.

It is our intention that no further action be taken with respect to Project I.

Project II - Remediation of Area Near Hole 8

NO CHANGE

Phase A of this project, i.e. to delineate scope of work, perform feasibility studies and file an action plan with OEPA (if required) will begin in May and most likely be completed by August 31. Limited availability of CDF technical personnel (not compensated from the escrow account) continues to affect progress on this phase, but should improve by May. Initiation of Phase B remediation activity should be possible sometime within the September-October period.

Project III - New Pretreatment and Lagoon Remediation

Phase A, Task I of this project for the design and permitting of a new process water pretreatment system, comprises three subtasks.

Subtask (1a), for determination and/or estimation of effluent flow rates proved to be much more complicated and time consuming than expected, but is now completed. This subtask was conducted mostly by CDF personnel (no charge to the escrow account) who were also deeply involved in the other two subtasks.

-2-

TA ON: STEAM EXHAUST
W RATES & DISCONTAMINATE
TO BE COLLECTED BY A
ACK TESTING COMPANY.

ND BROWNE
SSOCIATES, INC.
E PROCEEDING WELL
NEEDING HAVE
ED HELD ON SITE.

Subtask (1b), for analyses and determination of constituents of effluents is also completed. At this time, the only problem constituents appear to be oil/grease and residues (suspended solids). All these data have been sent to and discussed with producers and designers of pretreatment systems → AND FLOYD BROWNE

Subtask (1c) involves selection of producers and designers of the pretreatment system and obtaining their quotations. It has progressed as far as possible without reactions from the Massillon water department. Concepts have been developed and preliminary quotes have been received from three producers and one designer.

The Massillon water department has been fined for failure to meet state discharge regulations and their officials appear to be unwilling or unable to respond to our inquiries until they have their own discharges under control. Hence, Task I cannot be completed until we either receive the needed responses from Massillon or select the much more complicated alternative of discharging clean effluents into our existing lagoons.

FLOYD BROWNE
WILL CONTACT
AT THE
APPROPRIATE
TIME.

It is therefore uncertain when Phase A will be completed. We will continue to press for a response from Massillon. Certainly the April 1 target date for completion is not now realistic.

Phase B - Task I. This phase and task for removal and proper disposal of emulsions from the two lagoons was interrupted by cold weather after removal of over 30,000 gallons of emulsions from Lagoon One. A 100 gpm pump has been placed at the lagoon, ready to pump emulsions into a 20,000 gallon holding tank or ~~directly into tracks~~, until this phase of remediation is complete. Pumping should begin by April 15, weather permitting.

PURCHASE
PUMP &
SKIMMER
7/11/94
← WE WENT
RENTING TO
TRY IT OUT

Phase B - Task II was also impeded by the unusually cold weather and inability to obtain samples from the lagoon bottom. Completion of such removals and test results from samples should occur by July 30, provided we will be able to float a boat (to obtain bottom samples) before June 1.

SAMPLE
AFTER
MOST OF
OIL IS OFF
THE SURFACE

In Phase B, as with other phases, the man-hours of needed involvement of CDF personnel have far exceeded our expectations.

TERRY - WHEN YOU
THROW A ROCK IN THE
POND YOU NOW SEE WATER

William K. Cordier, Jr.
William K. Cordier, Chairman

WKC:lab
03/30/94

WE ARE GETTING
CLOSE.

CDF005207

3(b), 1(c), 2(b)

CANTON DROP FORGE, INC.

Miscellaneous Status Reports

Remediation (Audit Action Plan)

The yard separator system is operational and continues to be used to treat effluent from the plant proper prior to discharge into lagoon 2. Operational problems relating to the high viscosity and tackiness of the oil and grease continue to be experienced, but are being dealt with by the contractor (Workman) and CDF personnel.

A plan for a step-by-step study of a boiler house separator system has been developed and is being implemented. The prototype system includes modification of the current steam:water/oil separator unit in the exhaust steam line to improve efficiency, installation of a separator tank to remove non-emulsified oil from the water:oil effluent and characterization (volume and concentration) of the discharge emulsified oil:water effluent from the separator tank so that an appropriately designed final process unit, such as a coalescent filter, can be installed.

Bioremediation of material from lagoon 1 continues to be delayed by Critter's contract default and associated legal suits. Negotiations are underway to try to resolve this matter outside the court system. Simultaneously, alternate methods of dealing with the hydrocarbon contaminated soil have been and continued to be explored including:

- ALTERNATIVES
- (1) bioremediation on site by a firm other than Critter,
 - (2) using the contaminated soil as a base for asphalt produced by either hot or cold methods,
 - (3) trucking the soil to an outside source for bioremediation,
 - (4) partial-bioremediation of the soil and then using it for backfill of lagoon 1 after the lagoon has been lined with a plastic and/or clay layer to prevent leaching of hydrocarbons to surrounding soil or water and
 - (5) trucking the soil to an outside approved land-fill.

At this point, bioremediation on site by Critter appears to be the lowest-cost, least-risk approach, but the alternatives are strongly being considered.

OEPA

The consulting firm hired to model SO₂ emissions for various CDF operating levels and combinations of emitting sources has completed their initial work and has provided a report of their study during the past week. The report is being reviewed in order to respond to a past OEPA study that indicated that emissions from CDF can exceed maximum permissible limits under the worst-case scenario used by OEPA in their modeling.

Miscellaneous Status Reports

(continued)

1(c)

Meanwhile, without our knowledge, OEPA has evidently continued modeling CDF's SO₂ emissions, apparently as part of some modeling of emissions from a nearby source (Ashland Oil). A very recent report OEPA prepared regarding Ashland's model contain references to CDF's emissions exceeding permissible limits even under less than the worst-case scenario. Our legal consultants are planning a response.

China Project

The last release of blades for Shanghai Turbine Works are ready for shipment. We are awaiting a letter of credit and expect it to permit shipment in July.

Capital Projects

Computer-controlled Press/Manipulator

The preforming press continues to run well. However, with GE's low volume and our attempts to operate the forge shop with minimum personnel, some difficulty continues to be experienced in manning it without reducing hammer capacity on an intermittent basis. As experience in producing acceptable preforms on the press continues to grow, as is constantly happening, the manning problem decreases.

Rebuild of 35-1 Hammer

Completion of the 35-1 rebuild has been delayed initially by late delivery of the cylinder and ram from our machining source and now from a problem of match-up of the anvil with the top sub-base. After assembly, a gap of up to 0.100 inches was found to exist at the anvil:sub-base interface even though both surfaces had previously been machined to ensure flatness and full contact over the entire bearing surfaces. Even though the flatness of both surfaces were reportedly checked ~~for flatness~~ after machining, reinspection after disassembly indicates a flatness problem with both surfaces which is now being corrected. We now expect the hammer to be available for service by August 12 or 19, depending on the time required for remachining.

Continuous Heat Treat Furnace

A temperature uniformity survey is now being run on the new heat treat furnace prior to its release for production.

1(c), 1(d), 3(b)

subtask (1c) continued

Requests for quotes were sent to three potential builders of the pretreatment system and responses were received from two (FBA Environmental and Workman Industrial Services). Both bidders quoted a pretreatment system comprising two separators-----"separator Y" to process discharge from the forge shop and nearby areas of the plant, and "separator B" to handle discharges from the remainder of the plant. Both bidders accepted the specified 10 PPM maximum oil content for treated discharge from separator Y, but neither would agree to a maximum oil content of treated effluent from separator B, which contains oil that is emulsified and is therefore extremely difficult to isolate and separate. Workman, the lower of the two bidders, was selected to install separator Y and to work with us further in developing an effective, reasonably priced separator B system. A contract for \$130,000 was signed with Workman for construction and installation of separator Y.

To assist in developing an appropriate design for separator B, a consultant with prior related experience was employed. Also, a number of companies that claimed to have systems that might be suitable for our needs were contacted. A specification and bid request was developed and issued for this separator (B).

Phase A - Task 2 is for construction and installation of the pretreatment system. As indicated above, Workman was awarded a contract to install separator Y, and installation was completed in late January. Some

operational problems relating to the viscosity and tackiness of the grease and oil continue to be experienced with the system. However, the system is being routinely used to treat effluent from the plant proper prior to discharge into lagoon 2.

An RFQ for design and construction of separator B was sent to eight firms and their responses were due on March 22, 1996. All of the eight firms declined to quote, indicating that they were not willing to agree to a maximum level of oil in the discharge from a system because they were all uncertain of the potential efficiencies of any system in removing emulsified oil from the process stream. Numerous discussions and meetings have been held with potential system designers and a plan has been developed to install and operate a prototype system to provide a basis for system efficiency determinations. The prototype system involved the installation by CDF personnel of piping, pump and tank to accumulate the discharge from the boiler house and other related sources, pass it through a coalescing oil/water separator and monitor effluent oil content to determine the type and size of additional components needed to meet OEPA discharge requirements.

Phase B - Task 1 for removal and proper disposal of emulsions from two lagoon surfaces is complete for lagoon 1. The remaining part of this task, involving lagoon 2, will begin after the separators Y and B are both operating and discharges of (clear) effluent can be diverted to lagoon 1 or 3.

Phase B - Task 2 to determine volume and character of affected materials in the lagoons is now complete.

phase B - Task 3 for remediation of lagoons 1 and 2. Last year a contract for \$222,500 was awarded to Critter Company, the lower of two bidders, for bioremediation of an estimated 9,000 cubic yards of sludge and oil contaminated soil from the two lagoons. Lagoon 1 was emptied of oil, water and contaminated soil and residual material in the cavity is being bioremediated in situ. Contaminated soil was transported and is being treated in a bio-cell located on CDF property. Critter has reneged on the contract, claiming that the hydrocarbon level of the biocell soil is higher than they expected, based on tests originally conducted by Hammontree. Legal action is now underway. In the meantime, CDF has assumed the duty of maintaining and turning material in the biocell and arranging for periodic hydrocarbon testing. In addition, numerous alternatives for final use of the biocell material have been explored and several are being further evaluated.

While lagoon 1 is being remediated, lagoon 2 continues to be used for process water discharge. At our request, Hammontree has prepared a proposal ~~for~~ for lagoon 1 to permit its restoration for use as a receptacle for treated process waters so that remediation of lagoon 2 can be undertaken.

Best regards,

WKC:mp

cc: FHZollinger
JPBressanelli
K.Houseknecht

3, 1(c)

Memo to Jerry Bressanelli
Subject: Remediation Update
Date: 9/12/95
From: Keith Houseknecht

Separation of Oil From Steam

Parts for the exhaust steam meter are in the stock room.
Plans are being made to install the meter.
Unit Drop Forge has steam exhaust equipment similar to ours.
There separation tank has a steel wool like material inside the tank to aid separation.
There separation tank has a shower after the steel wool to knock down the oil.
The shower increases the effluent volume.

Separation of Oil From Condensate

Eaton Corp. as well as W-G uses dissolved air floatation to break emulsions
I have information from Krofta, a mfg. of DAF equipment.
My plan is to send a sample of our condensate to them for initial evaluation this week.
An onsite demonstration may be available by the middle of October.
Diversey and North Coast Environmental are not optimistic about breaking the emulsion
with chemicals and Ph adjustment.

Separation of Oil From Process Water

Drawings for the collection line on the west side of the forge shop, the grease trap and
the separator discharge line should be ready for review this week.
Installation of the above should begin by October 1.
It is our intention that these be put into service ASAP
When these are in service water from the grease trap will be pumped to pond #2
The separator will be installed at a later date.

Bio Cell for Pond #1

The material has been placed in the cell.
The material has been mixed and seeded 2 or 3 times.
The hydrogen peroxide has not been used
A hydroseeder was used to apply the last batch of microbes on Aug. 25.

HAMMONTREE & ASSOCIATES, LIMITED

RECORD OF TELEPHONE CALLDATE 9/12/95 TIME 2:00PROJECT BIOREMEDIATIONTELEPHONE NO. 520-299-9808

FAX NO. _____

TO Jerry Coons OF Critter Co.
FROM G&H OF H & A

SUBJECT DISCUSSEDACTION TO BE TAKENSTATUS

1. STILL TREATING
2. MAY WANT TO SAMPLE IN ABOUT 2 WEEKS
3. BIO-CELL TO BE "TURNED" SATURDAY THE 16 OR SAT SEPT. 23.
4. HE HAS ATTORNEY TRYING TO GET CHANGE ORDER PROCESSED - HIS ATTORNEY HAS BEEN IN CONTACT w/ CDF'S ATTORNEY
5. 4-5 INOCULATIONS TO DATE
6. THEY ARE TRYING TO STIMULATE OIL EATING BUGS AND NOT STIMULATE THE NON-OIL EATERS.

Keith
5

2 (b)

**AGREEMENT
CONTRACT 95-2B**

For BIOREMEDIATION, CANTON DROP FORGE, CANTON, OHIO.

THIS AGREEMENT, made and entered into at Canton, Ohio, this 21st day of June, 1995, by and between Canton Drop Forge Inc. (CDF) and Beaver Excavating, with an office located at 4650 Southway St. S.W., Canton, Ohio, hereinafter called the "CONTRACTOR".

WITNESSETH

That the CONTRACTOR has agreed and by these presents does agree that the CONTRACTOR, for the consideration of \$105,540.00 paid by CDF hereinbefore mentioned and contained in the proposal, and under penalty expressed in a bond bearing even date with these presents, and herein contained or hereunto annexed to furnish at his own cost and expense, all the necessary materials, labor, superintendence, tools and equipment, and shall execute, construct, finish and test in an expeditious, substantial and workmanlike manner, said improvements shown on the contract drawings described in the included specification or required by CDF, with all equipment and appurtenances, commencing work within (10) days from the date of notice from CDF to commence work and executing the same within the time and in the manner specified and in conformity with the requirements set forth in the specification herein contained or hereunto attached in accordance with the contract drawings of said work on file in the office of CDF and all to the acceptance of said CDF.

The project will consist of removing the sludges lining Lagoon #1 and Lagoon #2 and using ex-situ bio-remediation technology to reduce Total Petroleum Hydrocarbon (TPH) contamination levels of the excavated materials to below the target level of 380 ppm.

The estimated removal quantities are 3,000 c.y. from Lagoon #1 and 6,000 c.y. from Lagoon #2. During excavation the contractor shall maintain quantity estimates and keep CDF informed of the quantity removed. If it appears that material beyond the estimated quantity will require removal, the contractor shall immediately contact CDF representatives. CDF may halt removal prior to reaching the estimated quantities or request the removal of material beyond the estimated quantities. Payment will be based on the actual quantity of material removed and the unit prices. Tasks related to the bioremediation project include, but are not limited to, excavation of lagoon linings, transport of excavated materials to the on-site treatment areas, treatability studies, bio-cell design, bio-cell construction, bulking of excavated materials to enhance bioremediation, inoculation of materials to be treated and maintenance of biocell(s).

Once excavation of the lagoon materials is complete the contractor shall immediately "seed" the lagoon lining and walls prior to putting the lagoon back into service.

The contractor shall also estimate the type and number of samples for laboratory analysis that shall be retrieved by an independent agent.

The CONTRACTOR shall proceed with the said work in a prompt and diligent manner and shall do the several parts thereof at such times and in such order as the Engineer or his duly authorized agent may direct. Further, he shall complete the whole of said work in accordance with the specifications and contract drawings to the satisfaction of CDF and their Engineer.

CDF005214

If the CONTRACTOR shall fail to comply with any of the terms, conditions, provisions, or stipulations of this contract according to the true intent and meaning thereof, then CDF may avail itself of any or all remedies provided in that behalf in the contract, and shall have the right and power to proceed in accordance with provisions thereof.

It is hereby agreed by the parties to this Agreement that the provisions contained in the "Invitation for Bids", in the "Information and Instructions to Bidders", in the "Proposal and Bid Form", in the "Insurance Specifications", in the "Performance Bond", in the "General Conditions", in the "Supplemental General Conditions", and in the Lab Reports for the improvement, shall constitute integral parts of the agreement and collectively that they shall comprise and be known as the Agreement. It is hereby mutually agreed that CDF is to pay and the CONTRACTOR is to receive, a full compensation for furnishing all materials and labor in building, constructing, and in all respects completing the herein described work and appurtenances in the manner and under the conditions herein specified, the prices stipulated in the proposal herein contained or hereto annexed.

The CONTRACTOR agrees not to discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

Subject to the applicable provisions of law, this Agreement shall be in full force and effect as a contract from and after the date when a fully executed and approved counterpart hereof is delivered to the CONTRACTOR.

IN WITNESS WHEREOF, the parties hereunto affixed their signatures, the day and year first above mentioned.

CONTRACTOR

BEAVER EXCAVATING

Witness:

Kristina L. Casto
Kristina L. Casto

Date: June 15, 1995

By:

Stanley R. Evans
Title: Stanley R. Evans, Project Manager

Attest:

Margie Parker

Date:

6-21-95

CANTON DROP FORGE, INC.

By:

William K. Corder

* BEAVER EXCAVATING'S PROPOSAL DATED 4-28-95 AND LETTER DATED 6-12-95

2(b)

June 1, 1995
Page 1

The following items shall be considered to be part of the Canton Drop Forge Bioremediation contract documents.

EXCAVATION COORDINATION

All instruction and coordination regarding the excavation, transportation and placement of soil and sludge shall be the sole responsibility of the Bioremediation contractor. Invoices for excavation services shall be passed directly to CDF with no mark-up. Payment for excavation services shall be made by CDF directly to the excavation contractor. All invoices from the excavator shall be approved by the Critter Company prior to payment by CDF.

PROGRESS MONITORING AND PAYMENT

Monitoring shall be achieved by sampling the biocell contents and testing for TPH by EPA Method 418.1. Target levels of 380 mg/kg will be used for this project.

Progress sampling shall occur approximately once a month during summer months and once every two months during winter months. Each sampling session will consist of five (5) random samples from the biocell material. When the average TPH concentration of the five (5) samples is less than the appropriate level, and no single sample has a TPH concentration more than 15 percent (15%) above the treatment level, the appropriate payment will be made. PHC-DRO analysis will be performed on composite samples at the beginning, approximate middle, and end of treatment.

Payments shall be made based on the treatment level achieved.

After establishing initial contamination concentration with five (5) random samples, payments will be made according to the following:

HAMMONTREE & ASSOCIATES, LIMITED

FIRST 4,500 CY

<u>Treatment Level</u> <u>(% reduction of TPH)</u>	<u>Payment, %</u>
25%	18%
50%	9%
75%	9%
100%*	<u>9%</u>
Total	45%

SECOND 4,500 CY

<u>Treatment Level</u> <u>(% reduction of TPH)</u>	<u>Payment, %</u>
25%	18%
50%	9%
75%	9%
100%	<u>9%</u>
Total	90%**

*Target level of 380 mg/kg by EPA Method 418.1 is to be achieved, see section titled "Acceptance of Target Levels".

**The final 10% payment will be made one month after achieving target levels, provided that a confirmatory set of lab results indicate that acceptable target levels have been achieved.

HAMMONTREE & ASSOCIATES, LIMITED

ACCEPTANCE OF TARGET LEVELS

Sampling sessions will consist of five (5) random samples from the biocell material. When four (4) of the five (5) random samples are below the target level of 380 mg/kg and the fifth random sample is not more than ten percent (10%) over the target level, treatment of the material within the biocell shall be considered conditionally complete. Three more random samples shall then be taken to verify treatment progress. If two (2) of the three (3) additional random samples have TPH levels less than or equal to 380 mg/kg and the third sample is not more than ten percent (10%) over the target level, treatment of the material within the biocell shall be considered complete and payment for that portion of the project paid.

REMOVAL OF SLUDGES AND SOIL FROM CDF SITE

No material from the CDF site shall be removed from CDF property without CDF consent. Should material removal be required for any reason, CDF materials shall not be mixed with any other materials (bulking, etc.) without CDF consent. The location and status of all materials leaving CDF shall be communicated with CDF as requested.

ACORD. CERTIFICATE OF INSURANCE

CSR TB
BEAVE-2

DATE (MM/DD/YY)

6-15-95

PRODUCER

THE GENERAL INSURANCE AGENCY
P O BOX 709
DUBLIN OH 43017-0809

614-798-1222

INSURED

THE BEAVER EXCAVATING COMPANY
P O BOX 6059
CANTON OH 44706

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGE

COMPANY A CNA INSURANCE COMPANIES

COMPANY B CRUM & FORSTER COMMERCIAL INS

COMPANY C TO CERTIFICATE HOLDER: WE HAVE ISSUED THIS CERTIFICATE AS REQUESTED. PLEASE CHECK THIS DOCUMENT TO VERIFY THAT IT COMPLIES WITH YOUR CONTRACT WITH OUR INSURED. IF IT DOES NOT, PLEASE CONTACT OUR OFFICE IMMEDIATELY.

COMPANY D

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A	GENERAL LIABILITY	GL115034282	05/15/95	05/15/96	GENERAL AGGREGATE \$ 2,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				PRODUCTS - COMP/OP AGG \$ 2,000,000
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR				PERSONAL & ADV INJURY \$ 1,000,000
	<input type="checkbox"/> OWNER'S & CONTRACTOR'S PROT				EACH OCCURRENCE \$ 1,000,000
					FIRE DAMAGE (Any one fire) \$ 50,000
					MED EXP (Any one person) \$ 5,000
A	AUTOMOBILE LIABILITY	BUA115034296	05/15/95	05/15/96	COMBINED SINGLE LIMIT \$ 1,000,000
	<input checked="" type="checkbox"/> ANY AUTO				BODILY INJURY (Per person) \$
	<input type="checkbox"/> ALL OWNED AUTOS				BODILY INJURY (Per accident) \$
	<input checked="" type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE \$
	<input checked="" type="checkbox"/> HIRED AUTOS				
	<input checked="" type="checkbox"/> NON-OWNED AUTOS				
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT \$
	<input type="checkbox"/> ANY AUTO				OTHER THAN AUTO ONLY: \$
					EACH ACCIDENT \$
					AGGREGATE \$
B	EXCESS LIABILITY	5530253112	05/15/95	05/15/96	EACH OCCURRENCE \$ 3,000,000
	<input checked="" type="checkbox"/> UMBRELLA FORM				AGGREGATE \$ 3,000,000
	<input type="checkbox"/> OTHER THAN UMBRELLA FORM				\$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY				STATUTORY LIMITS \$
	THE PROPRIETOR/ PARTNERS/EXECUTIVE OFFICERS ARE: <input type="checkbox"/> INCL <input type="checkbox"/> EXCL				EACH ACCIDENT \$
					DISEASE - POLICY LIMIT \$
					DISEASE - EACH EMPLOYEE \$
	OTHER				

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS
ANY AND ALL WORK PERFORMED FOR THE CERTIFICATE HOLDER. (13)

ORIGINAL

CDF005219

CERTIFICATE HOLDER

Hammontree & Associates Limited
5233 Stoneham Road
N. Canton, Ohio 44720

BLANK-1

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

Samy W. Woe

ACORD 25 - CERTIFICATE OF INSURANCE

CSR TB
BEAVER-2

DATE (MM/DD/YY)

6-15-95

PRODUCER

THE GENERAL INSURANCE AGENCY
P O BOX 709
DUBLIN OH 43017-0809THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION
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HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR
ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGE

COMPANY
A CNA INSURANCE COMPANIESCOMPANY
B CRUM & FORSTER COMMERCIAL INSCOMPANY
C TO CERTIFICATE HOLDER: WE HAVE ISSUED THIS CERTIFICATE
AS REQUESTED. PLEASE CHECK THIS DOCUMENT TO VERIFY
COMPANY
D THAT IT COMPLIES WITH YOUR CONTRACT WITH OUR INSURED.
IF IT DOES NOT, PLEASE CONTACT OUR OFFICE IMMEDIATELY.

614-798-1222

INSURED

THE BEAVER EXCAVATING COMPANY
P O BOX 6059
CANTON OH 44706

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD
INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS
CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS,
EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
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	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				PRODUCTS - COMP/OP AGG \$ 2,000,000
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR				PERSONAL & ADV INJURY \$ 1,000,000
	<input type="checkbox"/> OWNER'S & CONTRACTOR'S PROT				EACH OCCURRENCE \$ 1,000,000
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	<input type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE \$
	<input checked="" type="checkbox"/> HIRED AUTOS				
	<input checked="" type="checkbox"/> NON-OWNED AUTOS				
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT \$
	<input type="checkbox"/> ANY AUTO				OTHER THAN AUTO ONLY: \$
					EACH ACCIDENT \$
					AGGREGATE \$
B	EXCESS LIABILITY	5530253112	05/15/95	05/15/96	EACH OCCURRENCE \$ 3,000,000
	<input checked="" type="checkbox"/> UMBRELLA FORM				AGGREGATE \$ 3,000,000
	<input type="checkbox"/> OTHER THAN UMBRELLA FORM				\$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY				STATUTORY LIMITS \$
	THE PROPRIETOR/ PARTNERS/EXECUTIVE OFFICERS ARE; <input type="checkbox"/> INCL <input type="checkbox"/> EXCL				EACH ACCIDENT \$
					DISEASE - POLICY LIMIT \$
	OTHER				DISEASE - EACH EMPLOYEE \$

ORIGINAL

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

ANY AND ALL WORK PERFORMED FOR THE CERTIFICATE HOLDER. (14)

CDF005220

CERTIFICATE HOLDER

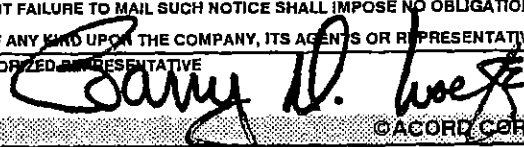
Canton Drop Forge
4575 Southway St. S.W.
Canton, Ohio 44706

BLANK-1

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE
EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL MAIL
30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT,
BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY
OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE



STATE OF OHIO
BUREAU OF WORKERS' COMPENSATION

COLUMBUS, OHIO 43215

CERTIFICATE OF PREMIUM PAYMENT

This certifies that the employer listed below has paid into the State Insurance Fund as required by law. Therefore, the employer is entitled to the rights and benefits of the fund for the period specified.

THIS CERTIFICATE MUST BE CONSPICUOUSLY POSTED.

RISK NO. AND EMPLOYER

PERIOD SPECIFIED BELOW

0281767

01-01-95 THRU 06-30-95

BEAVER EXCAVATING CO
4650 SOUTHWAY RD S W
CANTON OH 44706

BWC-1622 (Rev. 9/92)
DP-22

Wes Linnell
CEO/ADMINISTRATOR

THIS CERTIFICATE MAY BE REPRODUCED AS NEEDED



2(b)
THE BEAVER EXCAVATING COMPANY

June 12, 1995

Canton Drop Forge
c/o Hammontree & Associates
5233 Stoneham Rd.
North Canton, OH 44720

Attn: Gene G. Hill, E.I.T., M.S.

Gentlemen:

Enclosed is your signed contract and our original quotation to Environmental Resources, Inc. (The Critter Co.).

As you know, we had bid this project as a subcontractor, and therefore have not included any general conditions as noted in your specifications 01039 through 01700 inclusive. These items should be performed by The Critter Co.

Also, The Critter Co. was providing all inoculation, discing, maintenance, performance warranties, liability insurance for impact to the environment due to the performance of the work, etc. all as described in our quotation dated 4/28/95.

We have signed the enclosed contract with the understanding that this letter and our original quotation of 4/28/95, describing our work scope, be included as attachment to the contract.

Payment to us will be monthly for the work performed in the previous month, not on a pro-rata basis as stipulated on pages 1 and 2, Progress Monitoring & Payment, of the enclosed contract.

If you have any questions, please feel free to call.

Thank you,

Stanley R. Evans
Project Manager

gi

Encls.





THE BEAVER EXCAVATING COMPANY

April 28, 1995

Environmental Resources, Inc.
P.O. Box 276
Westerville, OH 43081

Attn: Scott Klingensmith, General Manager

Re: Canton Drop Forge
Removal & Bioremediation of the Sludge
Lining Lagoons #1 & #2

Gentlemen:

We are pleased to quote the following:

1.1.)	Removal of materials lining lagoon 1.		
	3,000 cy @ \$5.50/c.y.	\$ 16,500.00	
1.2.)	Transportation of materials from lagoon 1 to biocell.		
	3,000 cy @ \$5.80/c.y.	\$ 17,400.00	
2.1.)	Removal of materials lining lagoon 2.		
	6,000 cy @ \$5.50/c.y.	\$ 33,000.00	
2.2.)	Transportation of materials from lagoon 2 to biocell.		
	6,000 cy @ \$5.80/c.y.	\$ 34,800.00	
1.3 & 2.3)	Construction of biocell dike for lagoon #1 and #2 material (3' wide x 3' high with on-site adjacent material).		
	1920 lf @ \$2.00/l.f.	<u>\$ 3,840.00</u>	
	Total	\$105,540.00	



1(c), 2(b)

Environmental Resources, Inc.

Attn: Scott Klingensmith

April 28, 1995

Page -2-

Clarifications:

Work Not Included:

- 1.) Erosion and sedimentation control.
- 2.) Dewatering or pumping.
- 3.) Relocation of utilities.
- 4.) Permits.
- 5.) Testing and certification.
- 6.) Sheeting or shoring.
- 7.) On-site safety representative.
- 8.) Office trailer or temporary facilities.
- 9.) As-built drawings.
- 10.) Bulking materials.
- 11.) Haz-mat work or 40 hour trained personnel.
- 12.) Finish grading, topsoil, seed & mulch, weed killer.
- 13.) Dust prevention.
- 14.) Hauling any materials off-site or onto site.
- 15.) Compaction of soils.
- 16.) Moisture control.
- 17.) Biocell closure.
- 18.) Bond.

Bid is based upon:

- 1.) We do not accept any liability whatsoever for additional work or disposal of the unsuitable or contaminated material, or if bioremediation fails, we have not included disposal of lagoon materials.
- 2.) We do not accept CDF disclaimer, last paragraph, on Page 3-2 of Detailed Specifications, Unclassified Excavation and Disposal.
- 3.) We have included safety flagging for the perimeter of the lagoons, during cleaning. We have not included any other protection, repair, or safety measures for protection of persons, property, structures, utilities, environment, side slopes, roads, etc., and do not accept liability for same.
- 4.) We can provide a pump to pump storm water into CDF's discharge sump on a time and material basis, rates enclosed.
- 5.) Disking and maintenance of biocells will be provided on a time and material basis, rates enclosed.
- 6.) We have assumed a minimum of three (3) acres of biocell area.

Environmental Resources, Inc.

Attn: Scott Klingensmith

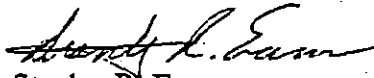
April 28, 1995

Page -3-

- 7.) Biocell construction includes construction of 1920 l.f. of dikes 3' high and 5' wide at base. We have not included stripping or grading of biocell site.
- 8.) Biocell dike material will be pushed up using on-site soil adjacent to dike and dozer tracked in place.
- 9.) Payment to be monthly for work performed in previous month.
- 10.) If we are awarded a subcontract for the above project, the indemnification clause will need to be revised to the satisfaction of our insurance carrier.

If you have any questions, please feel free to call.

Thank you,



Stanley R. Evans
Project Manager

gi



2(b)

EQUIPMENT RENTAL RATES

EFFECTIVE JANUARY 1, 1994

Page 1 of 4

TYPE OF EQUIPMENT

PER HOUR RATE

These rates include operator, fuel & maintenance unless noted otherwise.

Equipment move-in charge is machine rental rates times actual transportation time in hours (one hour minimum charge).

Large drag lines, cranes, backhoes, bulldozers, blades, rippers, etc. that require disassembly for transport and reassembly on the jobsite will be charged for required labor and lowboy time.

BACKHOES:

6400 Link Belt.....	3 1/2 to 5 cy.....	Price on Request
Cat 235, 5800 Link Belt.....	1 to 2 1/2 cy.....	\$ 112.00
300 Komatsu.....	1 to 2 cy.....	\$ 94.00
Cat 225, John Deere 690.....	3/4 to 1 1/2 cy.....	\$ 87.00
John Deere 490, 590.....	5/8 to 1 cy.....	\$ 77.00
Ford Rubber Tired Backhoe 755, 750, 655		\$ 72.00
Ford Rubber Tired Backhoe 555		\$ 66.00
Gradall G660		\$ 110.00

BULLDOZERS:

*Cat D9L, Fiat Allis HD-31.....	\$ 140.00
*Cat D9N, D9G, D8L	\$ 135.00
*Cat D8N, International TD-25.....	\$ 115.00
Cat D7H, D7G	\$ 98.00
Cat D6H, International TD15-E	\$ 92.00
Cat D5H	\$ 88.00
Case 1150	\$ 86.00

*Add \$ 25.00 per hour when using Hyd. Ripper

CDF005226



C E L E B R A T I N G F O R T Y Y E A R S

4650 Southway S.W. • P.O. Box 6059 • Canton, Ohio 44706
216 478-2151 FAX 216 478-2122

THE BEAVER EXCAVATING CO.

EQUIPMENT RENTAL RATES

Page 2 of 4
January 1, 1994

TYPE OF EQUIPMENT

PER HOUR RATES

WHEEL LOADERS:

Fiat Allis 945B.....	7 cy.....	\$ 130.00
Cat 966D, John Deere 644.....	4 cy.....	\$ 92.00
Michigan 75C.....	3 to 3 1/2 cy.....	\$ 88.00
John Deere 544	2 to 2 1/2 cy.....	\$ 80.00
Bobcat 743		\$ 77.00

TRACK LOADERS:

Cat 977L w/demo bucket.....		\$ 120.00
Cat 963 w/demo bucket.....		\$ 110.00
Cat 963 w/std. bucket.....	2 1/2 to 3 cy.....	\$ 100.00
Cat 953.....	2 to 2 1/2 cy.....	\$ 82.00
Cat 951	1 1/2 to 1 3/4 cy....	\$ 78.00
Case 450.....		\$ 68.00

CRANES:

Bucyrus Erie 30B HD Drag Line.....		\$ 92.00
JLG 1500U Hyd. Truck Crane (15 Ton).....		\$ 82.00
Link Belt LS78 Dragline.....		\$ 82.00

SCRAPERS:

Cat 631 C, D, E		\$ 150.00
Cat 631B	21 to 30 cy.....	\$ 130.00
Fiat Allis 161 Self Loading....	15 cy.....	\$ 110.00

THE BEAVER EXCAVATING CO.

EQUIPMENT RENTAL RATES

Page 3 of 4
January 1, 1994

TYPE OF EQUIPMENT	PER HOUR RATE
-------------------	---------------

GRADERS:

Cat 16G.....	\$ 98.00
Cat 14G & John Deere 770.....	\$ 90.00
John Deere 570 B.....	\$ 82.00

ROLLERS:

Cat 825 Sheepsfoot w/blade.....	\$ 120.00
Cat, Raygo, Bomag Vibrating (smooth drum), (self propelled),.....	\$ 80.00
Sheepsfoot Roller (prime mover additional).....	\$ 25.00
Ford 2000 w/broom, International w/broom.....	\$ 60.00
Vermeer T600D Frost Saw (teeth extra).....	\$ 185.00

TRUCKS:

Large Dump Trucks (Tandem & Triaxle).....	\$ 56.00
Single Axle Dump Trucks.....	\$ 50.00
Tractor & Dump Trailer.....	\$ 70.00
Tractor & Hyd. Lowboy.....	\$ 85.00
Tractor & Straight Lowboy or Flat Trl.....	\$ 70.00
Water Truck.....	\$ 56.00
Delivery Truck.....	\$ 38.00
John Deere Water Wagon.....	\$ 85.00
Cat 613B Water Wagon.....	\$ 95.00
Euclid 35 Ton (off road truck).....	\$ 110.00
Volvo 25 Ton Off Road 6 Wheel Drive.....	\$ 125.00

THE BEAVER EXCAVATING CO.

EQUIPMENT RENTAL RATES

Page 4 of 4
January 1, 1994

TYPE OF EQUIPMENT

PER HOUR RATE

EQUIPMENT WITH NO OPERATOR:

Air Compressor 85 to 185.....CFM w/hose.....	\$ 16.00
Air Compressor 200 to 375.....CFM w/hose.....	\$ 22.00
Air Compressor 750.....	\$ 32.00
Water Pumps:	
10" with 50 ft. hose.....	\$ 30.00
6" with 50 ft. hose.....	\$ 18.00
4" with 50 ft. hose (trash pump).....	\$ 15.00
1 1/2" - 3" with 50 ft. hose.....	\$ 12.00
Tramac BRH750 Hyd. Concrete Breaker.....	\$ 60.00
Stanley MB1850 Hyd. Concrete Breaker.....	\$ 55.00
Allied #88 Hyd. Concrete Breaker.....	\$ 50.00
Air Ram (incl. point) (375 compressor extra).....	\$ 25.00
Rammax Roller.....	\$ 25.00
Hoe Pac (soil compactor) Track Hoe.....	\$ 25.00
Hoe Pac (soil compactor) Rubber Tired Hoe.....	\$ 15.00
Compactor & Tampers (hand).....	\$ 12.00
Jackhammers & Air Tampers.....	\$ 12.00
Chain Saw.....	\$ 15.00
Sewer Laser.....	\$ 12.00
Torches (oxygen & acetylene extra).....	\$ 6.00

PER DATE RATE

Rome Disc.....	\$ 200.00
Floor Saw (blades extra).....	\$ 80.00
Cut-off Saw (blades extra).....	\$ 60.00
Cement Bucket.....	\$ 50.00
Headache Ball.....	\$ 50.00
Material Handling Box.....	\$ 60.00
Dragline Mats.....	\$ 20.00
Street Plates.....	\$ 15.00
Sewer Box.....	\$ 100.00

Note: The above rental rates are for normal conditions. Certain equipment applications which cause abnormal wear could require special negotiated rates. Special additional services such as sealing truck beds requires installation charges.



LABOR RATES - EFFECTIVE JULY 1, 1993

<u>Classification</u>	<u>Rate</u>	<u>Overtime Time & Half</u>	<u>Overtime Time & One Half w/Mach</u>	<u>Overtime Double</u>	<u>Overtime Double w/Mach</u>
Superintendent	\$53.97	\$73.75		\$93.53	
Foreman - General	\$45.72	\$62.21		\$78.70	
*Operator-Class A	\$35.18	\$47.07	\$11.89	\$58.97	\$23.79
Operator-Class B	\$35.00	\$46.82	\$11.82	\$58.64	\$23.64
Operator-Class C	\$33.44	\$44.64	\$11.20	\$55.84	\$22.40
Operator-Class D	\$32.78	\$43.72	\$10.94	\$54.65	\$21.87
Operator-Class E	\$27.01	\$35.64	\$ 8.63	\$44.26	\$17.25

*Operator Classifications: (A) Crane, Backhoe, & Gradall (B) Dozer, Loader, Grader, Pan & Paver (C) Asphalt Roller & Pump (D) Compressors & Rollers, Compactors & Farm Type Equipment (E) Oilers

Driver-Single, Tandem & Tri-Axle	\$28.30	\$37.68	\$ 9.38	\$47.06	\$18.76
Driver-Semi Dump	\$28.53	\$38.00	\$ 9.47	\$47.46	\$18.93
Driver-Lowboy	\$28.93	\$38.56	\$ 9.63	\$48.19	\$19.26
Labor-Journeyman	\$28.79	\$38.79		\$48.79	
Labor-Air & Power Tools	\$28.79	\$38.79		\$48.79	
Labor-Bottom Person & Pipe Layer	\$28.90	\$38.94		\$48.98	
Labor-Pusher	\$29.57	\$39.88		\$50.20	
Bricklayer- Journeyman	\$32.39	\$43.35		\$54.31	
Bricklayer- Foreman	\$33.89	\$45.45		\$57.01	
Carpenter- Journeyman	\$32.70	\$44.00		\$55.30	
Carpenter-Foreman	\$34.20	\$46.10		\$58.00	
Cement Finisher	\$32.74	\$43.80		\$54.85	
Cement Fin.Foreman	\$34.25	\$45.89		\$57.54	

THE BEAVER EXCAVATING COMPANY

W. Mark Sterling
President

CDF005230



C E L E B R A T I N G F O R T Y Y E A R S

4650 Southway S.W. • P.O. Box 6059 • Canton, Ohio 44706

313 478 0454 FAX 313 478 0422

2 (b) 7

Canton Drop Forge Bio Cell
Cell Depth Measurements
Gene Hill
Stan Evans
Keith Houseknecht
August 9, 1995

MEASUREMENT #	DEPTH
1	14
2	16
3	20
4	16
5	16
6	15
7	11
8	12
9	12
10	16

Mean	14.8
Standard Error	0.841
Median	15.5
Mode	16
Standard Devia	2.658
Variance	7.067
Kurtosis	0.343
Skewness	0.357
Range	9
Minimum	11
Maximum	20
Sum	148
Count	10
Confidence Lev	1.648

Gene-I have your folding rule.
The mean is 14.8
One key sure produces a lot of fluff.

R. JAMES HAMMONTREE, P.E., P.S.
BRUCE M. BAIR, P.E., P.S.
LAWRENCE D. PHILLIPS, P.E., P.S.
CHARLES F. HAMMONTREE, P.E., P.S.
RONALD P. DOHY, P.S.
GARY L. TOUSSANT, P.S.
JOSE E. TOLEDO, P.E., P.S.
RICHARD R. COOK, P.E., P.S.
JAMES C. BOLLIBON, P.E., P.S.
KEITH A. BENNETT, P.E., P.S.
BARBARA H. BENNETT, P.E., P.S.

265) Copy Jerry 10/4/95
HAMMONTREE & ASSOCIATES, LIMITED
Consulting Engineers - Planners - Surveyors

TREEMORE BUILDING
5233 STONEHAM ROAD
NORTH CANTON, OHIO 44720

PHONE (216) 499-8817
FAX (216) 499-0149
TOLL FREE 1-800-394-8817

MICHAEL L. DECKER, P.S.
RICHARD J. FAULHABER, P.E., P.S.
GREGORY E. MENCER, A.P.A.
DANIEL J. GRINSTEAD, P.E.
MARK E. FRANZEN, P.E.
KARL J. OPRISCH, P.E.
JEFFREY L. SPRAY, P.S.
PAUL A. TOMIC, P.S.
WILLIAM N. CLARK, P.E., P.S.
THOMAS J. KING, P.S.
DOMINIC A. MARTUCCIO, P.E., P.S.
PAUL K. MILLER, P.S.
DAVID T. MILLER, P.S.

October 2, 1995

The Critter Company
6890 East Sunrise Drive #120-10
Tucson, Arizona 85715

Attention: Jerry Coon

Subject: Change Order requests
dated September 20, 1995
Change Order Number: BIO-LAG 1-1
Change Order Number: BIO-LAG 1-2
Payment Schedule

Prior to responding to your change order request I will review the current contract agreement. The Critter Company (TCC) and Canton Drop Forge (CDF) entered into in agreement in June of 1995, for bioremediation services. Under this contract TCC's responsibilities included the following:

1. Treatability study
2. Bioengineering services
3. All site preparation necessary for treatment; including coordination of bio-cell construction.
4. Labor and material for inoculating the material to be treated.
5. All earthmoving and watering during the duration of the project, including weekly or bi-weekly tilling of bio-cell material.
6. Reports and documentation procedure.
7. Permitting

w:\rene\letter\coon2

CDF005232

Mr. Jerry Coon
October 2, 1995
Page 2

CDF and Hammontree & Associates, Ltd. (H&A) are responsible for:

1. Access to the treatment area (CDF).
2. Continuous water supply to the treatment area (CDF).
3. Soil sampling and testing including beginning, intermediate, and confirmation samples upon completion of the project (H&A)

We have reviewed and discussed the change order request with CDF. The following sections will address each item in your September 9, 1995 letter in order.

CHANGE ORDER - BIO-LAG 1-1, ITEM 1

The occurrence of scrap metal and debris at a forge company should have been expected and should not come as a surprise. TCC personnel were able to visit the CDF property including Lagoon #1 and the bio-cell site. In fact CDF personnel drew attention to the probable presence of such material to TCC.

TCC is considered the expert in determining the suitability of materials for bioremediation. As indicated by TCC, two factors which determine the suitability are the biodegradability of a material and the physical make up of a material. The investigation of these items was TCC's responsibility.

Based on these items, **CHANGE ORDER BIO-LAG 1-1, ITEM 1** is rejected.

CHANGE ORDER - BIO-LAG 1-1, ITEM 2

In the January 6, 1995, letter from TCC to H&A it is clear that TCC intended to be the party responsible for all earthmoving and watering during the project. In the report title "Lagoon #1 Sludge Disposal/Treatment Options", page 4 lists tilling of the bio-cell as part of TCC's responsibilities. This statement was included in the report as a result of your January 6, 1995 letter. The Critter Company received a copy of this report and was aware of each parties responsibilities during the project.

An April 28, 1995 Critter Company's letter also acknowledges TCC as the party responsible for tilling of the bio-cell.

Items 5 and 6 in the April 28, 1995 Critter Company letter indicate TCC's acceptance of performance based payments and the need for a mutually agreeable payment schedule. As requested by TCC and agreed to by Canton Drop Forge, payments based on performance were used in lieu of performance bond which you could not or would not provide.

Mr. Jerry Coon
October 2, 1995
Page 3

Direct payment to an "aeration contractor" is not acceptable. The tilling is included in the bid price of \$12/c.y. as listed on page 13 of the contract.

CHANGE ORDER: BIO-LAG 1-2, ITEM 1

In the January 6, 1995, letter from TCC it is clear that TCC will be responsible for the treatability study required for the project. Nowhere in that letter does it indicate that Hammontree & Associates or Canton Drop Forge was responsible for determining treatability. Hammontree & Associates is responsible for beginning, intermediate, and confirmation samples. Hammontree did retrieve and test materials lining Lagoon #1 as part of the preparation of "Lagoon #1 Sludge Disposal Treatment Options". As indicated on page 1 of that report the intent of that investigation was to determine whether the material was hazardous and/or biodegradable. This goal was met. Nowhere in this report does it indicate that the samples tested were representative of the average material. During sample retrieval attempts were made to pass through the bulk of the obviously contaminated material and into a "clean" layer to determine the physical limits of contamination and aid in treatment quantity estimation.

TCC was given samples of both the lining material and the material from the center of the sludge layer. TCC did not test these samples for TPH.

It was TCC's responsibility to verify contamination levels. Page 4 of "Lagoon #1 Sludge Disposal/Treatment Options" does indicate that Hammontree & Associates is to sample as required by TCC during remediation, however, Page 1 of Contract 95-2A states that initial contamination concentrations shall be established by five (5) random samples from the bio-cell material.

CHANGE ORDER: BIO-LAG 1-2, ITEM 2

The time frame shall be as stated in the contract documents. Altering the completion of work date is not acceptable to CDF.

CHANGE ORDER: BIO-LAG 1-2, ITEM 3

No comment required since Items 1 and 2 are not acceptable to CDF.

CHANGE ORDER: BIO-LAG 1-2, ITEM 4

No comment required. TCC is expected to conform to the contract documents.

Mr. Jerry Coon
October 2, 1995
Page 4

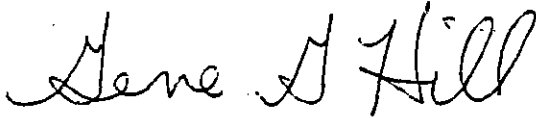
PAYMENT SCHEDULE

There is no justification for altering the payment schedule. The payment schedule in Contract 95-2A is very clear and mutually agreed upon. This type of payment schedule was requested by TCC in lieu of a performance bond. The only payments that fall outside of this schedule will be for work that is not covered in the contract document.

Also, I am requesting that five feet of clearance be maintained between the bio-cell material and the existing monitoring well. This was agreed to in preliminary bioremediation discussions.

Sincerely,

HAMMONTREE & ASSOCIATES, LIMITED

A handwritten signature in cursive script that reads "Gene G. Hill". The signature is written in dark ink and is positioned above the printed name.

Gene G. Hill, E.I.T., M.S.

2(b)

**CRITTER COMPANY
CHANGE ORDER REQUEST**

September 20, 1995

THE CRITTER COMPANY

Biological Remediation of Hydrocarbons

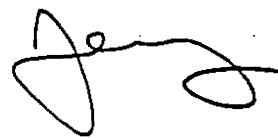
6890 E. Sunrise Drive #120-10 Tucson, Arizona 85715 (520) 299-9808

MEMORANDUM

To: Gene Hill
From: Jerry Coon
Date: September 20, 1995
Subject: Change Orders

1. Here are the requested changes we initially discussed in your office. We are again addressing the soil as one issue and the higher contaminant levels as the other. I have outlined two payment options. If you have other ones to suggest, please call me.
2. The money to be received upon execution of the changes reflects greatly increased costs to prepare for the project. I have had to alter my technique considerably from what I had initially planned on. I really have to treat what is in the cell as opposed to what we thought was in the cell. If we were to terminate the project at this time, I would anticipate preparing a statement for approximately \$38,000 for work performed to date. Option 2 should be the most attractive as it closely ties our performance with our pay. Either is acceptable to me.
3. Regarding the soil aeration, this Saturday we will try a "Bog Harrow" which will be delivered to the site from Kentucky. I am unfamiliar with this, as is Stan Evans, but I am told it will aerate to a depth of 18 inches and be impervious to the scrap metal which came from Lagoon #1. The Brown Bear aerator which we used is outstanding but is very expensive. Let's see how the Bog Harrow works and make a decision at that time.
4. We are experiencing difficulty in getting paid for work done to date. I know our attorneys have discussed this however a sixty day pay period on top of the lengthy bioremediation process is far excessive and needs to be changed. This is not part of their production process, is not classified as Cost of Goods Sold, and the money is set aside in escrow. Under normal conditions, this should be released immediately when the work is completed.
5. Again, call if you have some input or need clarification on these issues.

CC: Scott Klingensmith



See Scott K
LTR dtd 7/28/95
#5 & #6
Contract June 1 - initiated by SC

CDF005237

THE CRITTER COMPANY

Biological Remediation of Hydrocarbons

6890 E. Sunrise Drive #120-10 Tucson, Arizona 85715 (520) 299-9808

265

CHANGE ORDER

PROJECT

Canton Drop Forge
4575 Southway St., S. W.
P.O. Box 6902
Canton, Ohio 44706

CHANGE ORDER

NUMBER: BIO-LAG 1-1

DATE: 09/19/95

TO ENGINEER:

Hammontree & Associates
5233 Stoneham Rd.
North Canton, Ohio 44720

CONTRACT ORIGINALLY FOR: Bioremediation of oil contaminated soil from Lagoons #1 and #2.

The Contract is changed as follows: Pursuant to section 4.2.3 of the contract, The Critter Company, Inc. is requiring that this change order be approved.

1. Upon discovery by Beaver Excavation that debris was located in Lagoon # 1, and subsequently moved to the Bio Cell and as evidenced by visual observation by The Critter Company and as further evidenced by Mr. Larry Philyaw of Midwest Auger-Aerator (copy of letter attached and photographs taken by him available), the following change order is required.
2. All costs for soil aeration and movement during the bioremediation treatment from Lagoon # 1 shall be paid by Canton Drop Forge. Aeration shall be twice weekly by a method approved by The Critter Company but shall be paid directly by Canton Drop Forge to the contractor/equipment operator. As aeration is essential to a bioremediation project of this high contaminant level, aeration shall commence as soon as possible upon execution of this change order.

ACCEPTED BY:

Canton Drop Forge

Hammontree & Associates

The Critter Company

CDF005238

By:
Date:

By:
Date:

By:
Date:

Jeremy Coon
9/20/95

SOIL AERATION (TILLING) WAS INCLUDED IN
THE ORIGINAL CONTRACT. IT WAS NOT
TO BE DONE TO INCREASE TREATMENT
COST.

THE CRITTER COMPANY

Biological Remediation of Hydrocarbons

6890 E. Sunrise Drive #120-10 Tucson, Arizona 85715 (520) 299-9808

2(b)

CHANGE ORDER

PROJECT

Canton Drop Forge
4575 Southway St., S. W.
P.O. Box 6902
Canton, Ohio 44706

CHANGE ORDER

NUMBER: BIO-LAG 1-2

DATE: 09/20/95

TO ENGINEER:

Hammontree & Associates
5233 Stoneham Rd.
North Canton, Ohio 44720

CONTRACT ORIGINALLY FOR: Bioremediation of oil contaminated soil from Lagoons #1 and #2.

The Contract is changed as follows: Pursuant to section 4.2.3 of the contract, The Critter Company, Inc. is requiring that this change order be approved.

1. Upon confirmation from Hammontree & Associates, LTD, contamination levels of the material from Lagoon # 1 were on average three times the levels reported to The Critter Company (TCC) in analytical reports prepared by Hammontree & Associates, LTD. (Hammontree) prior to TCC bidding this project. Due to the extremely high contamination levels, TCC requires that the price to continue treating the 3000 cubic yards in the Bio-Cell be increased to \$26 per cubic yard.
2. Due to the high contamination levels in the Bio-Cell, TCC cannot be responsible for completing this project in two years. However, TCC will continue to treat the soil in the Bio-Cell until target levels are reached.
3. This change order is only for the 3,000 cubic yards in the Bio-Cell and is contingent upon acceptance of Change Order #BIO-LAG 1-1 and #BIO-LAG 1-2.
4. TCC has and will continue to manufacture microbes and treat the Bio-Cell while these change orders are reviewed and approved.

CDF005239

ORIGINAL: \$12.00/CY x 3000 CY = \$36,000

REVISED: \$26.00/CY x 3000 CY = \$78,000

217% INCREASE

(The total effort will likely be a 300% increase)

WHY SHOULD
PAYMENT
SCHEDULE
CHANGE?

PAYMENT SCHEDULE

One of the following payment schedule Options is required due to the increase in contamination levels resulting in anticipated increases in clean-up time, increases in production and labor costs and increases in research and development required to handle the difficulty of the contaminant and the site.

OPTION 1.

1. \$4,800 (Billed July 26, 1995) to be paid immediately.
2. \$21,000 due upon acceptance of this change order.
3. Three monthly payments of \$7,000 due October 30, 1995, November 30, 1995 and December 30, 1995.
4. Balance due of \$36,000 when levels of contamination reach target levels as specified in Bid Specifications. (Net 20 days)

OPTION 2.

1. \$4,800 (Billed July 26, 1995) to be paid immediately.
2. \$25,000 due upon acceptance of this change order.
3. 40% of balance (Lagoon #1 only) due when contamination levels have dropped to 25% of original levels. Net 20 days.
4. 25% of balance (Lagoon #1 only) when contamination levels have dropped to 50% of original levels. Net 20 days.
5. 25% of balance (Lagoon #1 only) when contamination levels have dropped to 75% of original levels. Net 20 days.
5. Remainder of balance (Lagoon #1 only) due when contamination levels have reached target levels. Net 20 days.

EXPIRATION DATE: September 30, 1995

As time is of the essence to continue treatment prior to colder temperatures, should this change order not be executed by the expiration date, TCC will submit a statement for work performed to date pursuant to Ohio Statutes.

ACCEPTED BY:

Canton Drop Forge

Hammontree & Associates

The Critter Company.

By:
Date:

By:
Date:

By:
Date:

James Com
Pres.
9/20/95



2(b)

September 5, 1995

Jerry Coon
Critter Co.
6890 E. Sunrise Dr.
#120-10
Tucson, AZ

Dear Jerry:

After visiting the job site at Canton, I would agree that the Brown Bear would definitely be the best tool for this project, but because of the extremely harsh working environment, I am quite concerned about damage to the machine. I am enclosing some photos we took of just a few items that can ruin tires, bend/break the auger, and take out the auger drive bearings and seals. We found numerous rocks and chunks of concrete large enough to do such damage. In addition, there are all kinds of metal stakes, shards, plate stock, I-beams, etc., plus cable that will wrap up on the auger and destroy seals and bearings.

You can expect extraordinary costs of operation due to these hazards, but it is difficult to tell you what to budget, because the extent of damage will be in direct relationship to how well the material is purged of these items before the Bear works there, and how careful the operator is in stopping and removing these items the instant they are turned up by the auger. Even without the extra damage, you will also have accelerated wear to the auger components due to the highly abrasive nature of the material.

We can rent you a Bear for this job for \$12,500 per month f.o.b. Pontiac, IL, and would also need a \$10,000 damage repair deposit to be applied toward the cost of any repairs the machine would need upon its return to our shop, to bring it back to the same condition as when it left, except for normal wear and tear. Additionally, the first month's rent and damage deposit must be received prior to shipment of the machine from our yard, and each subsequent month's rent is due at the start of the rental month. The rental period is from when the machine leaves our yard until it is returned, and upon the return inspection, any repairs needed will be paid for out of the \$10,000 deposit, with any balance being returned, or any additional being billed out. The machine is rented on a net net basis, meaning all operating costs and all repairs of any nature are the responsibility of the lessee.

Sales • Rentals • Parts • Service

18884N 1600E, P.O. Box 445 • Pontiac, Illinois 61764 • (815) 844-6400

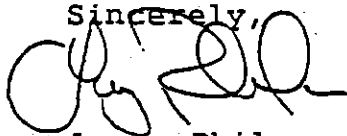
CDF005241

Our normal option to purchase the machine is to allow 100% of the rentals paid in, to apply to the purchase price of \$79,500, if the unit is purchased within the first 30 days of the rental contract, or 90% if purchased within 90 days. Of course, if the purchase option is exercised, the \$10,000 damage repair deposit would also be applied to the selling price.

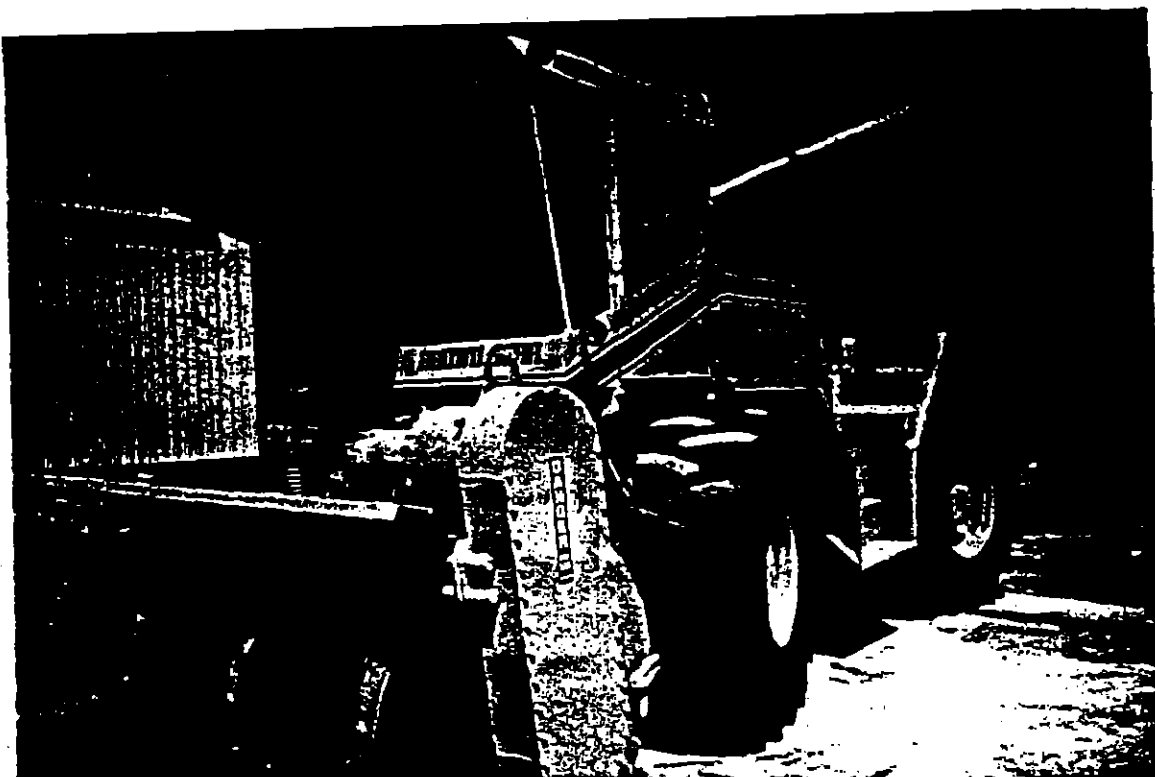
As for giving you some idea of what various costs might be, a set of 28.1-26 L1 tires will run about \$5000, an auger screw rebuild (wear plates, carbide teeth, hard facing, welding, etc.), will run \$2000-3000, auger bearings about \$1000-2000, and auger shaft replacement \$2000-3000. You may or may not have to bear these costs, as mentioned above, but I think I would allow something, especially enough for a set of tires and screw rebuild.

If you need any further information, please don't hesitate to call.

Sincerely,



Larry Philyaw
MIDWEST AUGER-AERATOR



BROWN BEAR I

STOCK # 1062

\$79,500

225 HP Brown Bear I w/10' Auger w/carbide cutting teeth. JD 6466A Diesel Engine. ROPS Cab w/Heater and Air Conditioning. Four Wheel Drive, Four Wheel Steering, with coordinated, crab & front-wheel-only steering modes. 28.1-26 L1 Forestry Tires, 75-80% Tread Remaining.

Machine completely rebuilt approximately 1500 hours ago, including hydraulic pumps & motors, differentials & axles. Recently gone through in shop, all systems checked, tested, & serviced or repaired as needed.

Available August 15, 1995. 30 day 50/50 warranty. Rent-purchase plan available.

RENTAL RATES: \$12,500/MO. 1 MO. MIN.
10,000/MO. 3 MO. MIN.
8,500/MO. 6 MO. MIN.



MIDWEST ROGER-REERTOR

1-800-3294

CDF005243

2(b)

CRITTER COMPANY LETTER

January 6, 1995

THE CRITTER COMPANY ^{2(b)}

Biological Remediation of Hydrocarbons

4725 E. Sunrise Drive #412 Tucson, Arizona 85718 (602) 299-9808

January 6, 1995

Mr. Gene Hill
Hammontree & Associates, LTD.
5233 Stoneham Rd.
North Canton, Ohio 44720

RE: Bioremediation proposal to treat approximately 3000 cubic yards.

Dear Mr. Hill,

THE CRITTER COMPANY INC. (TCC) is pleased to submit this proposal for the bioremediation of contaminated soil at your site in Canton, Ohio. Our proposal is based on using naturally occurring microorganisms to breakdown the hydrocarbon contamination into harmless fatty acids, water, and carbon dioxide. TCC will augment the contaminated soil with microbes specifically selected for their ability to degrade petroleum. TCC will manufacture the microbial product in quantities required to treat the subject site. By controlling the manufacturing process, we insure that the plate count (microbes per gram) is maximized and degradation is accelerated.

Attached is a scope of work describing the proposed treatment process. If this proposal is accepted, TCC will bioengineer the system to address specific site conditions in detail.

This proposal is subject to the following:

TERMS & CONDITIONS:

1. A treatability study that shows our process will effectively degrade the contaminant.
2. This proposal is based on treating approximately 3000 cubic yards.
3. **TCC will be responsible for the following:**
 - a. Treatability study.
 - b. Bioengineering services.
 - c. All site preparation for treatment.
 - d. Labor and material for inoculating the soil.
 - e. All earthmoving and watering during project.
 - f. Reports and documentation procedure.

JAM

CDF005245

4. Hammontree & Associates is responsible for the following:
- a. Access to treatment area.
 - b. Continuous water supply to the treatment area.
 - c. Soil testing including beginning, intermediate, and confirmation samples upon completion of project.
 - d. Permitting (If required).

PRICE QUOTATION: \$69,000

1. Payment of \$1,000 due upon acceptance of proposal.
2. 50% of balance (\$34,000) due at time of first inoculation.
3. Remainder of balance (\$34,000) due when the levels of contamination have reached closure levels.
4. Any substantial increase to the amount of contaminated soil will be billed at \$23 per cubic yard.
5. Price quotation includes total cost for The Critter Company regardless of project length or number of treatments.
6. Price quotation good for 90 days (April 6, 1995).

If you have any questions or need additional information, please do not hesitate to call me at (614) 431-8190 or Jerry Coon at (602) 299-9808. If this proposal is acceptable, please sign and return one copy.

Sincerely,
THE CRITTER COMPANY, INC.

Accepted By: _____



Signature: _____

Scott Klingensmith
Project Coordinator

Title: _____

Date: _____

Exhibits: Scope of Work

1(c), 2(b), 5

Portions of
**LAGOON #1 SLUDGE
DISPOSAL/TREATMENT OPTIONS**

Prepared For:

Canton Drop Forge
4575 Southway Street, S.W.
Canton, Ohio 44706

February 1, 1995

Prepared by:

Hammontree & Associates, Limited
5233 Stoneham Road
North Canton, Ohio 44720

CDF005247

I. INTRODUCTION

The following report addresses the settled materials found lining "Lagoon 1" at the Canton Drop Forge facility located on Southway Street S.W. in Canton, Ohio.

Currently the lagoon receives process cooling water and surface run-off from the forging facility. Both of these water sources are contaminated with petroleum products with the process cooling water being the major contributor of petroleum contamination to the lagoon. The management is in the process of investigating methods to remove oils and greases from the cooling water stream through industrial pretreatment. The tentative plan is to remove the materials lining the lagoon and maintain the site for future use as a stormwater and cooling water retention pond.

Sludge and sediment samples were retrieved from the lining of lagoon #1 to determine whether the material is considered hazardous and to investigate biodegradability. The materials found were non-hazardous and biodegradable. The materials were non-hazardous but high in Total Petroleum Hydrocarbons (TPH) (1,500 to 105,000 ppm). TPH contaminated soils are regulated by both the Environmental Protection Agency (EPA) and the Bureau of Underground Storage Tank Regulations (BUSTR). Technically the site is not subject to BUSTR regulations but to the often more stringent EPA regulations. However due to the industrial nature of the site the EPA may allow the BUSTR clean-up level of 105 ppm.

The most cost efficient means of handling TPH contaminated soils in this situation would be land filling and/or ex-situ bio-remediation. The optimum method(s) to use will depend on the management's preferences as well as the cost of clean up.

This report will discuss the materials found and Hammontree & Associates recommendations for the treatment of the material excavated from Lagoon #1.

II. SAMPLING

Sludge and sediment samples were retrieved from the bottom of lagoon #1 using both a "Mucksucker" and standard auger type sampler. Materials were retrieved from various locations and depths throughout the lagoon. Due to the similarity of the samples and the analytical results, exhaustive sampling was not justified. The only contamination above allowable levels was Total Petroleum Hydrocarbons (TPH). See Figure 1, Lagoon #1 Site Plan for sample locations.

III. LABORATORY ANALYSIS

All samples were tested for contaminants as outlined in the Resource Conservation and Recovery Act (RCRA). This includes the following:

1. Full Toxicity Leaching Characteristic Procedure (TCLP) (excluding herbicides & pesticides) This covers metals and organics for toxicity

2. Reactive Cyanide - reactivity
3. Reactive Sulfur - reactivity
4. Flash Point - Ignitability
5. pH - corrosivity
6. Paint Filter Liquids Test - landfills require solid wastes
7. PCB's - due to past detection (Governed under Toxic Substance Control Act) (TSCA)
8. Total Petroleum Hydrocarbons (TPH) - due to oil and grease contamination

Table 1: Lab Analysis Summary shows the analysis performed and subsequent results

TABLE 1: LAB ANALYSIS SUMMARY

M I S C E L L A N E O U S	Sample #	W-1	1	4	5	6	Regulatory Limit
	Parameter						
	Reactive Cyanide (ppm)	<0.5	<0.5	<0.5	<0.5	<0.5	
	Reactive Sulfur (ppm)	<25	<25	<25	<25	<25	
	Flash Point (°F)	97	>140	>140	>140	>140	
	pH	6.63	7.31	7.12	7.46	7.67	
	Free Liquid (%)	0	0	0	0	0	
	TPH (418.1) (ppm)	1510	1543	25,557	81,426	105,290	100
	DRO (8015) (ppm)	38	35	216	54	94	
	PCB's (ppm)	<2	<2	<2	<2	<2	
T C L P B N A	Cresols (ppm)	0.10	<0.02	0.13	<0.02	0.07	200
	1, 4-Dichlorobenzene	<0.02	<0.02	<0.02	<0.02	0.03	7.5
	2, 4-Dinitrotoluene	<0.02	<0.02	<0.02	0.04	<0.02	0.13
	Hexachlorobenzene	<0.02	<0.02	<0.02	0.05	0.02	0.13
	Hexachloro-1, 3-butadiene	<0.015	0.50	<0.02	0.02	0.08	0.5
	Nitrobenzene	<0.02	<0.02	<0.02	<0.02	0.38	2
	Pentachlorophenol	0.07	0.07	<0.05	<0.05	0.10	100
	Pyridine	<0.05	<0.05	<0.05	<0.05	<0.05	5
	2, 4, 5 Trichlorophenol	<0.05	<0.05	<0.05	<0.05	<0.05	400
	2, 4, 6 Trichlorophenol	<0.05	<0.05	<0.05	<0.05	<0.05	2
	Hexachloroethane	<0.02	<0.02	0.03	<0.02	0.05	3
T C L P V O L A T I L E S	Benzene	<0.05	<0.05	<0.05	<0.05	<0.05	0.5
	Carbon Tetrachloride	<0.05	<0.05	<0.05	<0.05	<0.05	0.5
	Chlorobenzene	<0.05	<0.05	<0.05	<0.05	<0.05	100
	Chloroform	<0.05	<0.05	<0.05	<0.05	<0.05	6
	1, 2-Dichloroethane	<0.05	<0.05	<0.05	<0.05	<0.05	0.5
	1, 1-Dichloroethane	<0.05	<0.05	<0.05	<0.05	<0.05	0.7
	2-Butanone (MEK)	<5	<5	<5	<5	<5	200
	Tetrachloroethene	<0.05	<0.05	<0.05	<0.05	<0.05	0.7
	Trichloroethene	<0.05	<0.05	<0.05	<0.05	<0.05	0.5
	Vinyl Chloride	<0.05	<0.05	<0.05	<0.05	<0.05	0.2
	Silver	<0.01	<0.01	<0.01	<0.01	<0.01	5
T C L P M E T A L S	Lead	<0.1	<0.1	<0.1	<0.1	1.0	5
	Cadmium	<0.005	<0.005	<0.005	<0.005	<0.005	1
	Chromium	<0.05	<0.05	<0.05	<0.05	<0.05	5
	Arsenic	<0.001	0.003	0.008	<0.01	<0.001	5
	Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.2
	Barium	1.5	<0.1	<0.1	23	15	100
	Selenium	0.0005	0.03	<0.002	<0.002	<0.002	1

Full Laboratory Analysis in Appendix B

-2-

HAMMONTREE & ASSOCIATES, LIMITED

VII. RECOMMENDATIONS

Based on the proposals received Hammontree & Associates recommends using the Critter Company to perform the service of bioremediation. Not only do they have lower costs, but they will repeat inoculations of nutrients and microbes until the clean-up is complete. Sunpro is more expensive and will charge over \$7,000.00 per inoculation after the fourth inoculation.

VIII. The Critter Company Proposal (see appendix D)

Bioremediate all 3,000 c.y. with a single bioremediation contract. One or two "batches" may be required based on the quantity excavated and the size of the biocell used.

The Critter Company (TCC) Responsibilities

1. Determine applicability of bioremediation.
2. Develop microbial and nutrient solutions required.
3. Design and construction of bio-cell.
4. Design and construct the required watering system.
5. Work with Hammontree & Associates in developing sampling plan.
6. Application of microbial and nutrient solutions to the contaminated soil.
7. Assess progress and determine modifications necessary.
8. Add filler to bio-cell as necessary.
9. Till soil as necessary.
10. Provide final documentation of results.

COST ESTIMATE = \$23.00/c.y.

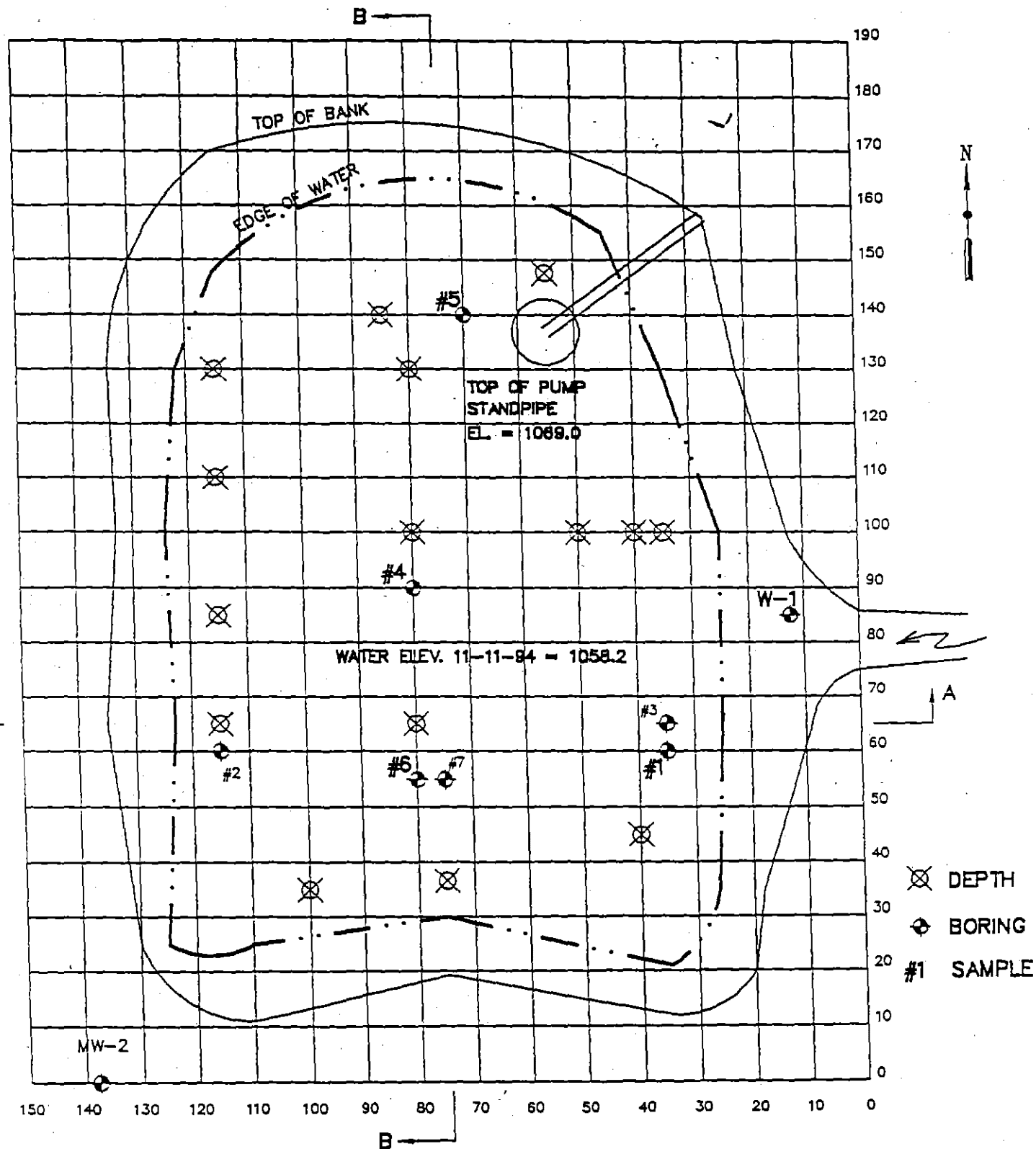
Hammontree & Associates Requirements

1. Coordinate activities as required.
2. Sample for Total Petroleum Hydrocarbons (TPH) as required by TCC.

COST ESTIMATE = \$120.00/sample

CDF Requirements

1. Determine suitable location for remediation site.
2. Provide access.
3. Provide Water.
4. Have legal group determine if permitting is required.



SAMPLE LOCATIONS

- W-1: FROM THE SIDEWALL, A GRAVELLY SAMPLE
- 1: THICK GREASE, ALMOST CLAY, COMPOSITE FROM 1.9' INTO MUCK AND 4.7' INTO MUCK
- 4: SOFY CLAY (BLACK) TO FAIRLY CLEAN GREASE (APPROX. 2.5' TO 4.0' BELOW MUCK)
- 5: DARK CLAY TO TAN CLAY 2.0' TO 2.5' BELOW MUCK
- 6: GREASE TO BLACK CLAY 2.0' TO 3.0' BELOW MUCK

CDF005251

CRITTER COMPANY LETTER

April 28, 1995

267

THE CRITTER COMPANY

Biological Remediation of Hydrocarbons

6890 E. Sunrise Drive, #120-10 Tucson, Arizona 85715 (520) 299-9808

April 28, 1995

Mr. Keith Houseknect
Canton Drop Forge
4575 Southway Street, S.W.
P.O. Box 6902
Canton, Ohio 44706

RE: Revised proposal for treating 9,000 cubic yards of sludge.

Dear Mr. Houseknect,

Pursuant to our conversation on Wednesday, April 26, 1995 and my conversation with Mr. Gene Hill of Hammontree & Associates on that same day, The Critter Company is proposing to biologically remediate sludge material found in lagoons 1 and 2. The Critter Company proposes to split excavating and bioremediation activities into two separate payment schedules for Canton Drop Forge. The Critter Company proposes the following:

PHASE I. (Excavating of material and building biocell)

- 1) The Critter Company will recommend an excavator to remove sludge from lagoons 1 and 2.
- 2) If necessary, the excavator will provide bonding to Canton Drop Forge.
- 3) The excavator will be paid directly by Canton Drop Forge for work completed.

PHASE II. (Bioremediation and maintenance of biocell)

- 1) The Critter Company will oversee construction of the biocell.
- 2) The Critter Company will inoculate the biocell and lagoon linings with microorganisms specifically grown and cultivated for this site.

- 3) The Critter Company will be responsible for all treatments and tilling of soil on a weekly or by-weekly schedule in the months of April-October.
- 4) The Critter Company will continue to treat until a composite sample reaches 380 ppm or less of total petroleum hydrocarbons.
- 5) The Critter Company will be paid by Canton Drop Forge based on performance of reducing contamination levels.
- 6) The Critter Company and Canton Drop Forge will mutually agree on a payment schedule based on reduction of contamination levels.

Environmental Resources, Inc. and our parent company, The Critter Company, Inc. appreciate this opportunity to bid. Environmental Resources is currently licensed to do business in the State of Ohio. If chosen as the bioremediation contractor on this project, The Critter Company will register with the State of Ohio. The Critter Company carries 2 million dollars of liability insurance. All of our treatment specialists are OSHA 40-Hour Health and Safety trained. If you have any questions or need additional information, please feel free to contact me at (614) 431-8190, or Mr. Jerry Coon in our corporate headquarters at (800) 483-4284.

Sincerely,
THE CRITTER COMPANY, INC.



Scott Klingensmith
Project Coordinator

2(b)

**Portion of Contract
95-2A**

June 1, 1995

2(b)

June 1, 1995
Page 1

The following items shall be considered to be part of the Canton Drop Forge Bioremediation contract documents.

EXCAVATION COORDINATION

All instruction and coordination regarding the excavation, transportation and placement of soil and sludge shall be the sole responsibility of the Bioremediation contractor. Invoices for excavation services shall be passed directly to CDF with no mark-up. Payment for excavation services shall be made by CDF directly to the excavation contractor. All invoices from the excavator shall be approved by the Critter Company prior to payment by CDF.

PROGRESS MONITORING AND PAYMENT

Monitoring shall be achieved by sampling the biocell contents and testing for TPH by EPA Method 418.1. Target levels of 380 mg/kg will be used for this project.

Progress sampling shall occur approximately once a month during summer months and once every two months during winter months. Each sampling session will consist of five (5) random samples from the biocell material. When the average TPH concentration of the five (5) samples is less than the appropriate level, and no single sample has a TPH concentration more than 15 percent (15%) above the treatment level, the appropriate payment will be made. PHC-DRO analysis will be performed on composite samples at the beginning, approximate middle, and end of treatment.

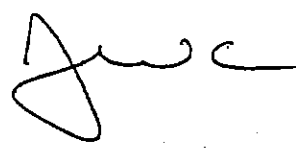
Payments shall be made based on the treatment level achieved.

After establishing initial contamination concentration with five (5) random samples, payments will be made according to the following:

HAMMONTREE & ASSOCIATES, LIMITED

w:progress

CONTRACT 95-2A



CDF005256

FIRST 4,500 CY

<u>Treatment Level</u> <u>(% reduction of TPH)</u>	<u>Payment, %</u>
25%	18%
50%	9%
75%	9%
100%*	<u>9%</u>
Total	45%

SECOND 4,500 CY

<u>Treatment Level</u> <u>(% reduction of TPH)</u>	<u>Payment, %</u>
25%	18%
50%	9%
75%	9%
100%	<u>9%</u>
Total	90%**

*Target level of 380 mg/kg by EPA Method 418.1 is to be achieved, see section titled "Acceptance of Target Levels".

**The final 10% payment will be made one month after achieving target levels, provided that a confirmatory set of lab results indicate that acceptable target levels have been achieved.

HAMMONTREE & ASSOCIATES, LIMITED

w:progress

CONTRACT 95-2A


CDF005257

**Canton Drop Forge
Ex-Situ Bioremediation - Lagoon #1**

April 1995

Item No	Item	Est'd Quantity	Unit	Separate Unit Prices (figures)		Combined Unit Prices (to be written in words)	Quantity Times Unit Total
				Mat'L	Labor	Mat'l-Labor-Unit-Total	Amount
1.1	Removal of materials lining Lagoon 1	3,000	c.y.	N/A	\$5.50/cy	FIVE DOLLARS AND FIFTY CENTS PER CUBIC YARDS	\$16,500
1.2	Transportation of materials from Lagoon 1 to biocell(s)	3,000	c.y.	N/A	\$5.80/cy	FIVE DOLLARS AND EIGHTY CENTS PER CUBIC YARDS	\$17,400
1.3	Construction of biocell(s) for Lagoon 1 materials	Lump	Lump	N/A	\$1,920	ONE-THOUSAND AND NINE HUNDRED AND TWENTY DOLLARS	\$ 1,920
1.4	Treatability study of materials in Lagoon 1	Lump	Lump	N/A	N/A	-	-
1.5	Bulking of materials from Lagoon 1 with on site materials if required*	1,000	c.y.	N/A	N/A	-	-
1.6	Bulking of materials from Lagoon 1 with off site materials if required*	1,000	c.y.	N/A	N/A	-	-
1.7	Inoculation of materials in Lagoon 1 biocell(s)**	3,000	c.y.	\$4.00/c.y.	\$8.00/c.y.	TWELVE DOLLARS PER CUBIC YARD	\$36,000
1.8	Inoculation of Lagoon 1 lining after sludge removal	Lump	Lump	\$1,000	\$2,000	THREE THOUSAND DOLLARS	\$ 3,000
1.9	Site visits	30	Ea.	Included on item 1.7		-	-

If the contractor does not expect the use of bulking material please indicate by using N/A

* All items may not be required. Unit process will still be useful in the event that all items are required.

** Inoculation costs shall be based on c.y. of material excavated from the Lagoon #1, not the bulked volume.

Sub-Total Lagoon No. 1 \$ 74,820.00

TOTAL
BID
(WAT)

The Contractor agrees to complete all of the work specified for this contract within five hundred forty-eight (548) calendar days (one and one half years) after the date of Notice to Proceed. The bid prices shall include all labor, materials, equipment, overhead, profit, insurance, etc., to cover the finished work. Should contamination still exceed target levels (TPH≤380 ppm), after one and one half years, a meeting between CDF representatives and the contractor shall occur. Based on this meeting CDF will either:

1. Require that all contaminated material resulting from this project be excavated and moved off site for disposal (no further treatment) at a regulated landfill, at no cost to CDF.

OR

2. Allow the contractor six (6) additional months to achieve target levels at no cost to CDF. If after the six (6) month extension target levels have not been achieved, CDF may exercise Option 1. Should the landfilling option be exercised, the contractor must receive CDF approval of all proposed disposal activities prior to disposal. After disposal CDF shall receive documentation verifying proper disposal. If the Contractor does not submit an approved disposal plan within six (6) months of the formal decision to exercise Option 1, CDF may seek outside contractors to remove the TPH contaminated soil resulting from ex-situ bio-remediation attempts. If in-situ means are used, 3,000 c.y. from Lagoon #1 and 9,000 c.y. from Lagoon #2 shall be removed. CDF will bill the bio-remediation contractor for all disposal activities.

Bidder understands that Canton Drop Forge (CDF) reserves the right to reject any or all bids and waive any informalities in the bidding. The bidder agrees that this bid shall be good any may not be withdrawn for a period of 60 calendar days after the scheduled closing time for receiving bids.

Upon receipt of Notice of Award by CDF, bidder will execute the formal contract attached within 10 days and deliver a Surety Bond or Bonds as required. The bid security attached in the form of _____ in the sum of _____ (\$ _____) is to become the property of CDF in the event the contract and bond are not executed within the time above set forth, as liquidated damages for the delay and additional expense to CDF caused thereby.

BIDDER acknowledges receipt of the following ADDENDUM:

Addendum No. _____, Dated _____

Addendum No. _____, Dated _____

Addendum No. _____, Dated _____

Addendum No. _____, Dated _____

*See attached Proposal

-15-

U:\USR\SPECTEXT\LAGOON\BIDTOTAL.DOC

CDF005259

EXPERIENCE AND EQUIPMENT QUESTIONNAIRE

Have you, or your Company, or any organization of which you have been a responsible officer or agent, ever failed to complete any work awarded to you? If so, where and why?

p.

No.

The work awarded or to be awarded will have the personal supervision of whom?

Mr. Jerry Coon of The Critter Company, Inc.

ety

Explain approximately your plan and layout for performing the proposed work.

The Critter Company, Inc. will oversee the construction of a biocell that will encompass approximately 3 acres located between lagoons 2 and 3.

The biocell will be constructed with on-site clean material. A 3' wide and 3' high dike will be built around the entire treatment cell.

Excavated sludge from the two lagoons will be placed into the biocell.

The sludge will be spread to a thickness of 12" to 20" depending on soil conditions. A heavy inoculation of microorganisms will be sprayed on the bottom of the biocell prior to contaminated soil being spread in the treatment cell. The contaminated soil will be sprayed and tilled

on a weekly or by-weekly basis until contamination levels have reached closure levels. Lagoon bottoms will also be lined with microorganisms after material has been 19 excavated.

w:\renel\specques

CDF005260

Summit Environmental Technologies, Inc.

your connection to a cleaner environment

A2LA CERTIFICATION NO. 724.01

Offices in Major U.S. Cities



September 18, 1996

1

Hammontree & Associates
5233 Stoneham Road
North Canton, OH 44720

Date Collected: 9/12/96
Date Received: 9/12/96
Project #: CDF-BIOCELL
Client ID #: CDF-BIOCELL
Laboratory ID #: 961134-01
Matrix: Solid

<u>Parameter</u>	<u>Detection Limit</u>	<u>Results</u>	<u>Method</u>	<u>Date of Analysis</u>
TPH	10.0 mg/kg	469,996.0 mg/kg	418.1	9/13/96

144,000 TPH

RE TESTED SAME
SAMPLE - NEW TEST
AFTER MIXING SHOWED
KH

called
9/23/96
re: high results
GCH

From PZ.
lc.

Laboratory Manager: Bassam Youssef

A handwritten signature in black ink, appearing to read "Bassam Youssef", written over the printed name.

CDF005261

SPECIAL INSTRUCTIONS: multiple filtration - please MIX the sample to get good composite
RELINQUISHED BY: Gene Hill DATE: 9/12/96 RELINQUISHED BY: DATE:
RECEIVED AT THE LAB BY: R. C. DATE: 9/12/96

2(b), 5(b), 1(c)

7

R. JAMES HAMMONTREE, P.E., P.S.
BRUCE M. BAIR, P.E., P.S.
LAWRENCE D. PHILLIPS, P.E., P.S.
CHARLES F. HAMMONTREE, P.E., P.S.
RONALD P. DOHY, P.S.
GARY L. TOUSSANT, P.S.
JOSE E. TOLEDO, P.E., P.S.
RICHARD R. COOK, P.E., P.S.
JAMES C. BOLLIBON, P.E., P.S.

HAMMONTREE & ASSOCIATES, LIMITED
Consulting Engineers - Planners - Surveyors

TREEMORE BUILDING
5233 STONEHAM ROAD
NORTH CANTON, OHIO 44720

PHONE (216) 499-8817
FAX (216) 499-0149
TOLL FREE 1-800-394-8817

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MARK E. FRANZEN, P.E.
KARL J. OPRISCH, P.E.
BARBARA H. BENNETT, P.E., P.S.
WILLIAM N. CLARK, P.E., P.S.
THOMAS J. KING, P.S.
PAUL K. MILLER, P.S.

October 4, 1994

RECEIVED

OCT 5 1994

CANTON DROP FORGE

Canton Drop Forge
4575 Southway Street
P.O. Box 6902
Canton, Ohio 44706-0902

Attention: **Mr. Houseknecht**

Dear Mr. Houseknecht:

This letter represents Hammontree & Associates response to your request for a revised proposal concerning the sampling of sludges from the basin of lagoon #1 at your Southway Street Facility.

The following proposal is based on our understanding that you plan to dredge the lagoon and use it as a stormwater and treated process water retention pond.

If you have any questions or comments that may alter the sampling or testing, please call so we can develop a plan that suits your needs.

Respectfully,

HAMMONTREE & ASSOCIATES, LIMITED



Gene G. Hill, E.I.T., M.S.

Prior to excavation and disposal of materials lining lagoon #1, it is necessary to determine whether these materials are considered hazardous (as defined in CFR 40, part 261).

If the materials tested are determined to be non-hazardous they may be disposed of in a local non-hazardous licensed landfill. If the materials tested are found to be hazardous other options of treatment/disposal must be investigated. The characteristics of a waste that determine whether a hazardous classification is warranted are toxicity, corrosivity, ignitability and reactivity.

To perform the sampling and testing required to classify the sludge from lagoon #1, Hammontree & Associates will follow procedures outlined in "Test Methods for Evaluating Solid Waste" (SW 846) distributed by the Federal Environmental Protection Agency.

Hammontree & Associates will retrieve four to six sludge/sediment samples and have the following analysis performed:

1. Full Toxicity Leaching Characteristic Procedure (TCLP) (excluding herbicides & pesticides) **This will cover metals and organics for toxicity**
2. Reactive Cyanide - **reactivity**
3. Reactive Sulfur - **reactivity**
4. Flash Point - **ignitability**
5. pH - **corrosivity**
6. Paint Filter Liquids Test - **landfills require solid wastes**
7. PCB's - **due to past detection** (Governed under Toxic Substance Control Act) (TSCA)
8. Total Petroleum Hydrocarbons (TPH) - **due to oil and grease contamination**

These tests are required by landfills prior to accepting industrial/oil contaminated sludge.

We feel that determining the hazardous/non-hazardous status of the material should be completed prior to any further studies or investigations.

We expect laboratory analysis of each sample to cost \$1,250.00. Our services will include developing a sampling plan, retrieving samples, laboratory analysis, and a report discussing the results of the analysis and options available.

The estimated cost of the outlined work is as follows:

Prepare sampling plan according to SW846	800.00
Retrieve samples (2 man crew)	2,280.00
Miscellaneous disposable supplies	200.00
Lab analysis (6 samples)	7,500.00
Analysis/Options Report	2,200.00
Estimated Cost	\$12,980.00

In reviewing this proposal for professional services, it should be understood that the above proposal items and their corresponding fees do not necessarily represent the full scope of services required for the project. Rather, it represents our best effort to set forth those services which we believe to be those requested by you, the client, and/or those we can determine to be needed to accomplish a particular objective. However, we recognize, and we ask that the client recognize, that as the project progresses, the scope of services as originally defined may change in content to include work not initially identified. Several factors will cause this to happen:

Better understanding of the project, the site, and the client's goals as progress on the project is made.

1. Additional requirements identified by the client.
2. Policy changes or additional requirements by the permitting agencies.
3. As these influences occur and are identified, we will advise you of same and seek the direction to proceed.

Work required as a result of the above will be "extra work" outside of the original scope of services. Upon your direction, we will perform the work under the "Work Not Specified" section of this proposal or we can provide you with a separate proposal should the scope so indicate.

WORK NOT SPECIFIED

Work not specified in the above proposal items will not be performed without your prior knowledge and approval. When merited, we will provide you with a lump sum fee for additional services. Otherwise, additional services will be performed on an hourly basis, at the following rates: \$92.00 per hour for field crews; \$57.00 per hour for computing, calculations, legal descriptions, engineering, planning and associated coordination activities; \$82.00 per hour for services by a Registered Engineer for representation before public bodies including meetings, and processing of plans, permits, etc. through those agencies.

HOURLY CHARGES

Hourly work will be billed at our current prevailing rates.

w:southway

R. JAMES HAMMONTREE, P.E., P.S.
BRUCE M. BAIR, P.E., P.S.
LAWRENCE D. PHILLIPS, P.E., P.S.
CHARLES F. HAMMONTREE, P.E., P.S.
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2(b), 5(b), 1(c)

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PAUL K. MILLER, P.S.

October 4, 1994

RECEIVED

OCT 5 1994

CANTON DROP FORGE

Canton Drop Forge
4575 Southway Street
P.O. Box 6902
Canton, Ohio 44706-0902

Attention: **Mr. Houseknecht**

Dear Mr. Houseknecht:

This letter represents Hammontree & Associates response to your request for proposal concerning the sampling of sludges from the basin of **lagoon #2** at your Southway Street Facility.

The following proposal is based on our understanding that you plan to dredge the lagoon and use it as a stormwater and treated process water retention pond.

If you have any questions or comments that may alter the sampling or testing or the scope of work required for **lagoon #2**, please call so we can develop a plan that suits your needs.

Respectfully,

HAMMONTREE & ASSOCIATES, LIMITED

Gene G. Hill

Gene G. Hill, E.I.T., M.S.

Prior to excavation and disposal of materials lining lagoon #2, it is necessary to determine whether these materials are considered hazardous (as defined in CFR 40, part 261).

If the materials tested are determined to be non-hazardous they may be disposed of in a local non-hazardous licensed landfill. If the materials tested are found to be hazardous other options of treatment/disposal must be investigated. The characteristics of a waste that determine whether a hazardous classification is warranted are toxicity, corrosivity, ignitability and reactivity.

To perform the sampling and testing required to classify the sludge from lagoon #2, Hammontree & Associates will follow procedures outlined in "Test Methods for Evaluating Solid Waste" (SW 846) distributed by the Federal Environmental Protection Agency.

Hammontree & Associates will retrieve four to six sludge/sediment samples and have the following analysis performed:

1. Full Toxicity Leaching Characteristic Procedure (TCLP) (excluding herbicides & pesticides) This will cover metals and organics for toxicity
2. Reactive Cyanide - reactivity
3. Reactive Sulfur - reactivity
4. Flash Point - ignitability
5. pH - corrosivity
6. Paint Filter Liquids Test - landfills require solid wastes
7. PCB's - due to past detection (Governed under Toxic Substance Control Act) (TSCA)
8. Total Petroleum Hydrocarbons (TPH) - due to oil and grease contamination

These tests are required by landfills prior to accepting industrial/oil contaminated sludge.

We feel that determining the hazardous/non-hazardous status of the material should be completed prior to any further studies or investigations.

We expect laboratory analysis of each sample to cost \$1,250.00. Our services will include developing a sampling plan, retrieving samples, laboratory analysis, and a report discussing the results of the analysis and options available.

The estimated cost of the outlined work is as follows:

Prepare sampling plan according to SW846	912.00
Retrieve samples (2 man crew)	2,736.00
Miscellaneous disposable supplies	200.00
Lab analysis (8 samples)	10,000.00
Analysis/Options Report	2,000.00
Estimated Cost	\$15,848.00

In reviewing this proposal for professional services, it should be understood that the above proposal items and their corresponding fees do not necessarily represent the full scope of services required for the project. Rather, it represents our best effort to set forth those services which we believe to be those requested by you, the client, and/or those we can determine to be needed to accomplish a particular objective. However, we recognize, and we ask that the client recognize, that as the project progresses, the scope of services as originally defined may change in content to include work not initially identified. Several factors will cause this to happen:

Better understanding of the project, the site, and the client's goals as progress on the project is made.

1. Additional requirements identified by the client.
2. Policy changes or additional requirements by the permitting agencies.
3. As these influences occur and are identified, we will advise you of same and seek the direction to proceed.

Work required as a result of the above will be "extra work" outside of the original scope of services. Upon your direction, we will perform the work under the "Work Not Specified" section of this proposal or we can provide you with a separate proposal should the scope so indicate.

WORK NOT SPECIFIED

Work not specified in the above proposal items will not be performed without your prior knowledge and approval. When merited, we will provide you with a lump sum fee for additional services. Otherwise, additional services will be performed on an hourly basis, at the following rates: \$92.00 per hour for field crews; \$57.00 per hour for computing, calculations, legal descriptions, engineering, planning and associated coordination activities; \$82.00 per hour for services by a Registered Engineer for representation before public bodies including meetings, and processing of plans, permits, etc. through those agencies.

HOURLY CHARGES

Hourly work will be billed at our current prevailing rates.

w:\rene\south1.doc



FACSIMILE TRANSMITTAL

DATE: 10/4/94 TIME: 4:00 () A. M. (☒) P. M.

TO: NAME: KEITH HOUSEKNECHT
BUSINESS NAME: CDF 477-4511 - JERRY
FACSIMILE NUMBER: (216) 477-2046

FROM: HAMMONTREE AND ASSOCIATES, LIMITED
5233 STONEHAM ROAD
NORTH CANTON, OHIO 44720

TELEPHONE NUMBERS: (216) 499-8817 CANTON OFFICE
(216) 633-7274 AKRON OFFICE
(216) 499-0149 FACSIMILE

SENDER'S NAME: GENE
PROJECT: _____
NUMBER OF PAGES (INCLUDING THIS PAGE): _____
BRIEF DESCRIPTION (OPTIONAL): _____

ADDITIONAL INSTRUCTIONS OR MESSAGES TO RECIPIENT:

KEITH,

HERE IS MATERIAL YOU REQUIRE.

CHECK SCOPE FOR LAGOON #2 TO SEE

IF IT IS WHAT YOU WANT

GENE

Prior to excavation and disposal of materials lining lagoon #2, it is necessary to determine whether these materials are considered hazardous (as defined in CFR 40, part 261).

If the materials tested are determined to be non-hazardous they may be disposed of in a local non-hazardous licensed landfill. If the materials tested are found to be hazardous other options of treatment/disposal must be investigated. The characteristics of a waste that determine whether a hazardous classification is warranted are toxicity, corrosivity, ignitability and reactivity.

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HOURLY CHARGES

Hourly work will be billed at our current prevailing rates.

w:\rene\south1.doc

R. JAMES HAMMONTREE, P.E., P.S.
 BRUCE M. BARR, P.E., P.S.
 LAWRENCE D. PHILLIPS, P.E., P.S.
 CHARLES F. HAMMONTREE, P.E., P.S.
 RONALD P. DOHY, P.S.
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 RICHARD R. COOK, P.E., P.S.
 JAMES C. BOLUBON, P.E., P.S.

HAMMONTREE & ASSOCIATES, LIMITED

Consulting Engineers - Planners - Surveyors

TREEMORE BUILDING
 5233 STONEHAM ROAD
 NORTH CANTON, OHIO 44720

PHONE (216) 499-8817
 FAX (216) 499-0149
 TOLL FREE 1-800-394-8817

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 WILLIAM N. CLARK, P.E., P.S.
 THOMAS J. KING, P.S.
 PAUL K. MILLER, P.S.

October 4, 1994

Canton Drop Forge
 4575 Southway Street
 P.O. Box 6902
 Canton, Ohio 44706-0902

Attention: Mr. Houseknecht

Dear Mr. Houseknecht:

This letter represents Hammontree & Associates response to your request for proposal concerning the sampling of sludges from the basin of lagoon #2 at your Southway Street Facility.

The following proposal is based on our understanding that you plan to dredge the lagoon and use it as a stormwater and treated process water retention pond.

If you have any questions or comments that may alter the sampling or testing or the scope of work required for lagoon #2, please call so we can develop a plan that suits your needs.

Respectfully,

HAMMONTREE & ASSOCIATES, LIMITED

Gene G. Hill

Gene G. Hill, E.I.T., M.S.

Samples Total 20 min
 # Samples From Basin 6 min
 6 of 20
 Time Limit on Samples
 STORAGE & LOCATION
 0 Hammontree
 TEST 6 of 20 min

*PER GENE
 1 week 1st Round Results
 2 week SAVE SAMPLES*

*(616) 723-6291
 ANDY*

2(b)

Viscous Liquid - C

II OF SAMPLES

DISPOSAL OF SAMPLES

LOCATION OF DECON AREA

PERSONAL PROTECTION (COPY OF HEALTH & SAFETY PLAN)

DEPTH & VOLUME ESTIMATE

CHARACTERISTICS

TPH, PCB, VOC'S, METALS, TCLP, FLASH

FROM WATER SURFACE

34 - SAMPLES

REPORT - T-1000 No. 23

60-65 / cu yd - 2 TON 50 TON PRO WASTE No. 23
150-200 - HAZARDOUS

R. JAMES HAMMONTREE, P.E., P.S.
BRUCE M. BAIR, P.E., P.S.
LAWRENCE D. PHILLIPS, P.E., P.S.
CHARLES F. HAMMONTREE, P.E., P.S.
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2(b), 5(b), 1(c)

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WILLIAM N. CLARK, P.E., P.S.
THOMAS J. KING, P.S.
PAUL K. MILLER, P.S.

RECEIVED

September 7, 1994

SEP 8 1994

CANTON DROP FORGE

Canton Drop Forge
4575 Southway Street
P.O. Box 6902
Canton, Ohio 44706-0902

Attention: **Mr. Houseknecht**

Dear Mr. Houseknecht:

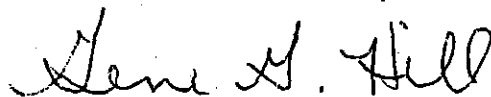
This letter represents Hammontree & Associates response to your request for proposal concerning the sampling of sludges from the basin of lagoon #1 at your Southway Street Facility.

The following proposal is based on our understanding that you plan to dredge the lagoon and use it as a stormwater and treated process water retention pond.

If you have any questions or comments that may alter the sampling or testing, please call so we can develop a plan that suits your needs.

Respectfully,

HAMMONTREE & ASSOCIATES, LIMITED



Gene G. Hill, E.I.T., M.S.

CDF005274

Prior to excavation and disposal of materials lining lagoon #1, it is necessary to determine whether these materials are considered hazardous (as defined in CFR 40, part 261).

If the materials tested are determined to be non-hazardous they may be disposed of in a local non-hazardous licensed landfill. If the materials tested are found to be hazardous other options of treatment/disposal must be investigated. The characteristics of a waste that determine whether a hazardous classification is warranted are toxicity, corrosivity, ignitability and reactivity.

To perform the sampling and testing required to classify the sludge from lagoon #1, Hammontree & Associates will follow procedures outlined in "Test Methods for Evaluating Solid Waste" (SW 846) distributed by the Federal Environmental Protection Agency.

Hammontree & Associates will retrieve four to six sludge/sediment samples and have the following analysis performed:

1. Full Toxicity Leaching Characteristic Procedure (TCLP) (excluding herbicides & pesticides) **This will cover metals and organics for toxicity**
2. Reactive Cyanide - reactivity
3. Reactive Sulfur - reactivity
4. Flash Point - ignitability
5. pH - corrosivity
6. Paint Filter Liquids Test - **landfills require solid wastes**
7. PCB's - **due to past detection** (Governed under Toxic Substance Control Act) (TSCA)
8. Total Petroleum Hydrocarbons (TPH) - **due to oil and grease contamination**

These tests are required by landfills prior to accepting industrial/oil contaminated sludge.

We feel that determining the hazardous/non-hazardous status of the material should be completed prior to any further studies or investigations.

We expect laboratory analysis of each sample to cost \$1,250.00. Our services will include developing a sampling plan, retrieving samples, laboratory analysis, and a report discussing the results of the analysis and options available.

The estimated cost of the outlined work is as follows:

Prepare sampling plan according to SW846	680.00
Retrieve samples (2 man crew)	1,200.00
Lab analysis (6 samples)	7,500.00
Analysis/Options Report	2,200.00
Estimated Cost	\$11,580.00

In reviewing this proposal for professional services, it should be understood that the above proposal items and their corresponding fees do not necessarily represent the full scope of services required for the project. Rather, it represents our best effort to set forth those services which we believe to be those requested by you, the client, and/or those we can determine to be needed to accomplish a particular objective. However, we recognize, and we ask that the client recognize, that as the project progresses, the scope of services as originally defined may change in content to include work not initially identified. Several factors will cause this to happen:

Better understanding of the project, the site, and the client's goals as progress on the project is made.

1. Additional requirements identified by the client.
2. Policy changes or additional requirements by the permitting agencies.
3. As these influences occur and are identified, we will advise you of same and seek the direction to proceed.

Work required as a result of the above will be "extra work" outside of the original scope of services. Upon your direction, we will perform the work under the "Work Not Specified" section of this proposal or we can provide you with a separate proposal should the scope so indicate.

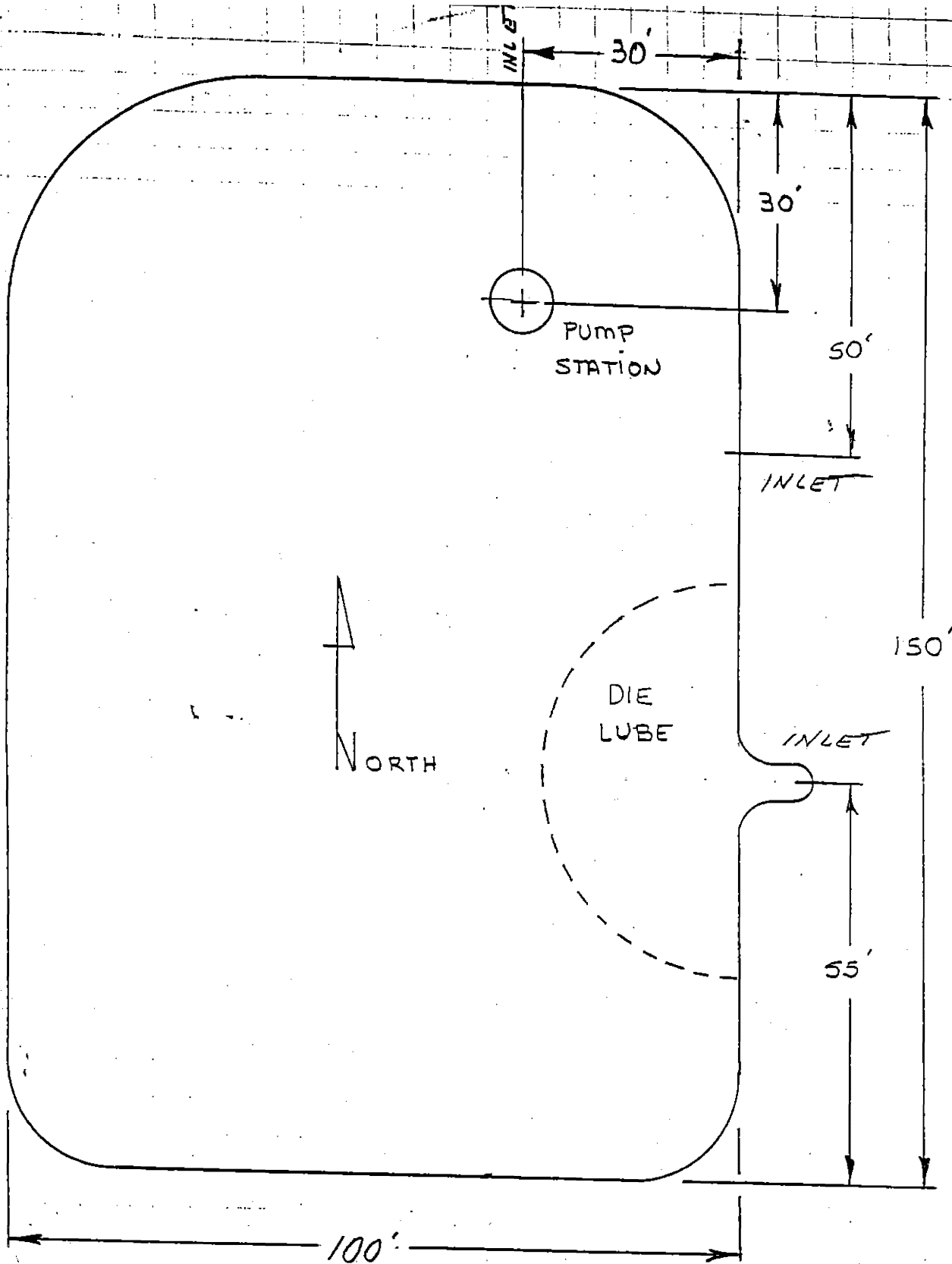
WORK NOT SPECIFIED

Work not specified in the above proposal items will not be performed without your prior knowledge and approval. When merited, we will provide you with a lump sum fee for additional services. Otherwise, additional services will be performed on an hourly basis, at the following rates: \$92.00 per hour for field crews; \$57.00 per hour for computing, calculations, legal descriptions, engineering, planning and associated coordination activities; \$82.00 per hour for services by a Registered Engineer for representation before public bodies including meetings, and processing of plans, permits, etc. through those agencies.

HOURLY CHARGES

Hourly work will be billed at our current prevailing rates.

w:southway



LAGOON #1
ALL DIMENSIONS APPROX.
KEITH
8/29/94

CDF005277

R. JAMES HAMMONTREE, P.E., P.S.
BRUCE M. BAIR, P.E., P.S.
LAWRENCE D. PHILLIPS, P.E., P.S.
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260
HAMMONTREE & ASSOCIATES, LIMITED
Consulting Engineers - Planners - Surveyors

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NORTH CANTON, OHIO 44720

PHONE (216) 499-8817
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February 22, 1995

5
MICHAEL L. DECKER, P.S.
RICHARD J. FAULHABER, P.E., P.S.
KEITH A. BENNETT, P.E.
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MARK E. FRANZEN, P.E.
KARL J. OPRISCH, P.E.
BARBARA H. BENNETT, P.E.

RECEIVED

FEB 24 1995

CANTON DROP FORGE

Canton Drop Forge
4575 Southway Street S.W.
P.O. Box 6902
Canton, Ohio 44706

Attention: **Keith Houseknecht**

Re: **Status of Sampling & Testing of Lagoons #1 & #2**

Dear Mr. Houseknecht:

This is a summary of purchase orders #092310 and #092309 for sampling and testing of Lagoon #1 and #2, respectively. It is anticipated that we will require an additional amount of fees to complete these two (2) work elements.

The costs involved more time than expected to properly set up each sampling point; different sampling techniques were required because of heavy gravel and cobble stone encountered during the sampling; clean up of equipment between samples and final clean up was difficult because normal degreasers and cleaning agents would not cut the oil; three (3) samples were delivered to potential remediation contractors and a landfill to obtain relative costs for clean-up; and additional samples were obtained at the request of Canton Drop Forge.

NOTE 1

	Purchase Order #092310	Purchase Order #092309
Amount Authorized	\$15,848.00	\$12,980.00
Amount Invoiced through January 31, 1995	15,820.62	12,902.24
Expected Fees to complete Sampling & Testing	1,264.00	1,104.00
Additional Fees Required	\$ 1,237.00	\$ 1,026.00

NOTE 2

RECEIVED

FEB 24 1995

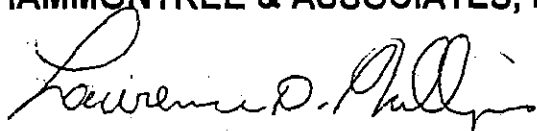
Mr. Keith Houseknecht
February 22, 1995
Page 2

CANTON DROP FORGE

Please process this request at your convenience. This additional time will also permit us to have several review meetings with you and your staff to discuss implementation. If you have any questions, please call at your convenience.

Very truly yours,

HAMMONTREE & ASSOCIATES, LIMITED



Lawrence D. Phillips, P.E., P.S.
Partner

LDP/jrc

NOTE 1 TOTAL COST FOR THIS REQUEST
WAS TO BE \$400.

NOTE 2 THIS IS AN 8 & 8 1/2 % OVER RUN

2(b), 5(b)

U6287

LARRY PHILLIPS, HAMMOND TREE
WILL HAVE SPECIFICATION READY
BY TUES. MARCH 14. HE IS TALKING
WITH A CONTRACTOR ON WED. MARCH 8
WHICH WILL ALLOW HIM TO 1) WRITE
THE SPEC. & 2) QUOTE ON DESIGN
BUILD HIMSELF.

NORMALLY I WOULD NOT AGREE WITH
THE SAME PEOPLE WRITING THE
SPEC. & QUOTING. HE SAYS "NO GAMES"

LTP
3/7/95

R. JAMES HAMMONTREE, P.E., P.S.
BRUCE M. BAIR, P.E., P.S.
LAWRENCE D. PHILLIPS, P.E., P.S.
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CHARLES F. HAMMONTREE, P.E., P.S.
JAMES C. BOLLIBON, P.E., P.S.

3, 1(c), 1(d)
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Consulting Engineers - Planners - Surveyors

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KARL J. OPRISCH, P.E.
BARBARA H. BENNETT, P.E.

RECEIVED

February 7, 1995

FEB 8 1995

CANTON DROP FORGE

Canton Drop Forge
4575 Southway Street
P.O. Box 6902
Canton, Ohio 44706-0902

Attention: Keith Houseknecht

Dear Mr. Houseknecht:

Hammontree & Associates, Limited has reviewed the Oil/Water Separation Design Report (October 1994) which was submitted to Canton Drop Forge by FBA Environmental. The general design and layout of the proposed system appears to be sound and workable yet there are a few items which should be clarified or addressed.

The following is a list of comments which Hammontree & Associates has developed during the review process:

1. Canton Drop Forge may wish to maintain the ability to discharge the "yard" O/W separator back into Pond one (1). Small piping changes would make this option possible.
2. There is no apparent reason to double pump from Pond one (1) to Pond two (2). The sump pump in the press room can easily be by-passed. We understand this sump may already be by passed. There should be a separate force main from the separator at the south end of the Forge Shop to the storm sewers draining into Lagoon #2. Have you considered discharging by gravity into Lagoon #1? We expect Lagoon #1 to continue to receive storm water discharges.
3. Should the drain in the oil house be connected to the 6" PVC pipe which ties into the "yard" O/W separator?

RECEIVED

FEB 8 1995

FORGE SHOP

Mr. Keith Houseknecht
February 7, 1995
Page 2

4. Has testing been done to verify the suitability of the proposed units to treat the effluent? Either perform pilot testing or treatability studies for properties of the effluent to determine O/W separator applicability. There was no manufacturer's data supplied. Chemical and physical properties of the effluent may effect separator efficiency.
5. What are the O&M costs associated with the proposed units? Expected useful life?
6. Can the units be modified for other effluents?
7. The Oil/Water separator north of the saw department is in front of a door to building "C". Is there sufficient room for installation?
8. The report should correct pond identification numbers.
9. Is 120 gpm sufficient to handle peak flows from the Forge Shop building "C"? Sizing was not discussed for the north end of the Forge Shop.
10. Will there be separate slop oil storage tanks? What sizes are expected?
11. Does the sump in the basement of the boiler house receive any oil?
12. The oils condensate drain from the hot process softener should be treated prior to discharge to Pond #2 (Plate #1) (Okay on Plate #4).
13. The steam separator at the north end of the Forge Shop should be attached either to the building or stand alone. The stand by "Anvil" will be removed to another location.
14. Do the three lines to Pond one (1) on Plate four (4) represent the "Die Lube", "Steam Line" and "Surface Drainage" discharging to the south and west of the Forge Shop?

Respectfully,

HAMMONTREE & ASSOCIATES, LIMITED



Gene G. Hill, E.I.T., M.S.

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2(5), 1(c), 5(b)
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WILLIAM N. CLARK, P.E., P.S.
THOMAS J. KING, P.S.
PAUL K. MILLER, P.S.

JPB
Lagoon #1
Canton Drop Forge
4575 Southway Street
P.O. Box 6902
Canton, Ohio 44706-0902
September 7, 1994

Canton Drop Forge
4575 Southway Street
P.O. Box 6902
Canton, Ohio 44706-0902

Attention: **Mr. Houseknecht**

Dear Mr. Houseknecht:

This letter represents Hammontree & Associates response to your request for proposal concerning the sampling of sludges from the basin of lagoon #1 at your Southway Street Facility.

The following proposal is based on our understanding that you plan to dredge the lagoon and use it as a stormwater and treated process water retention pond.

If you have any questions or comments that may alter the sampling or testing, please call so we can develop a plan that suits your needs.

Respectfully,

HAMMONTREE & ASSOCIATES, LIMITED

Gene G. Hill

Gene G. Hill, E.I.T., M.S.

Prior to excavation and disposal of materials lining lagoon #1, it is necessary to determine whether these materials are considered hazardous (as defined in CFR 40, part 261).

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3. Reactive Sulfur - **reactivity**
4. Flash Point - **ignitability**
5. pH - **corrosivity**
6. Paint Filter Liquids Test - **landfills require solid wastes**
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These tests are required by landfills prior to accepting industrial/oil contaminated sludge.

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We expect laboratory analysis of each sample to cost \$1,250.00. Our services will include developing a sampling plan, retrieving samples, laboratory analysis, and a report discussing the results of the analysis and options available.

The estimated cost of the outlined work is as follows:

Prepare sampling plan according to SW846	680.00
Retrieve samples (2 man crew)	1,200.00
Lab analysis (6 samples)	7,500.00
Analysis/Options Report	2,200.00
Estimated Cost	\$11,580.00

In reviewing this proposal for professional services, it should be understood that the above proposal items and their corresponding fees do not necessarily represent the full scope of services required for the project. Rather, it represents our best effort to set forth those services which we believe to be those requested by you, the client, and/or those we can determine to be needed to accomplish a particular objective. However, we recognize, and we ask that the client recognize, that as the project progresses, the scope of services as originally defined may change in content to include work not initially identified. Several factors will cause this to happen:

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Work required as a result of the above will be "extra work" outside of the original scope of services. Upon your direction, we will perform the work under the "Work Not Specified" section of this proposal or we can provide you with a separate proposal should the scope so indicate.

WORK NOT SPECIFIED

Work not specified in the above proposal items will not be performed without your prior knowledge and approval. When merited, we will provide you with a lump sum fee for additional services. Otherwise, additional services will be performed on an hourly basis, at the following rates: \$92.00 per hour for field crews; \$57.00 per hour for computing, calculations, legal descriptions, engineering, planning and associated coordination activities; \$82.00 per hour for services by a Registered Engineer for representation before public bodies including meetings, and processing of plans, permits, etc. through those agencies.

HOURLY CHARGES

Hourly work will be billed at our current prevailing rates.

w:southway

THE CRITTER COMPANY

Biological Remediation of Hydrocarbons

2(b)

6890 E. Sunrise Drive, #120-10 Tucson, Arizona 85715 (520) 299-9808

GGH

RECEIVED

JUN 6 1995

CANTON DROP FORGE

June 2, 1995

Mr. Gene Hill
Hammontree & Associates, LTD.
5233 Stoneham Rd.
North Canton, Ohio 44720

RE: Canton Drop Forge Bioremediation Project.

Dear Gene,

The following is a response to your comments and questions regarding the Canton Drop Forge bioremediation project as outlined in your letter on May 19, 1995.

I. TIME FRAME:

- A. To better serve Canton Drop Forge, The Critter Company has already designed and manufactured over 200 lbs. of oil eating microbes to start this project. Additional microbes will be grown on-site throughout the duration of the project.
- B. Upon signing of the contract, The Critter Company will have Beaver Excavating build the Bio-Cell. This will take 2 to 3 days. Work can commence within 5 days of signing of the contract.
- C. The Critter Company will then seed the bottom of the Bio-Cell with nutrients and oil eating microbes prior to any material from Lagoons 1 or 2 entering the cell. Beaver Excavating will then proceed to excavate sludge material from Lagoon 1, transport material to the Bio-Cell, and spread it out over the Bio-Cell. It will take approximately 2 weeks to build the Bio-Cell and completely empty Lagoon 1.
- D. If additional space exists in the Bio-Cell, The Critter Company, with permission from Canton Drop Forge, will have Beaver Excavating transport the material from Lagoon 2 into the Bio-Cell until it has reached full capacity. The Critter Company and Beaver Excavating estimate that no more than 4,500 cubic yards will fit into the Bio-Cell. Contaminated soils will be spread throughout the Bio-Cell at a depth of 18-22 inches. A 3 foot dike will be constructed around the entire cell to prevent run-off.

RECEIVED

JUN 6 1995

Page 2

CANTON DROP FORGE

2. WORK PLAN & SCHEDULE:

A. Pumping - The Critter Company asks that Canton Drop Forge remove as much of the water from Lagoons 1 and 2 out as possible prior to Beaver Excavating removing sludge material.

B. Rain - Unless several inches of rain falls within a 24-48 hour period, we do not foresee weather adversely affecting removal of sludge.

C. Layout of Bio-Cell - The layout and location of the Bio-Cell will be dependent upon how much land can be allocated by Canton Drop Forge for this project. The Critter Company will ask Keith Houseknect or an other representative from Canton Drop Forge be on-site during the building of the Bio-Cell in order to mark boundaries for the excavation crew. Currently, several large pieces of CDF equipment occupy the space where the Bio-Cell will be constructed. Therefore, The Critter Company cannot outline the exact boundaries of the cell at this time. However, it is our understanding from Keith Houseknect that the cell can be constructed around each piece of equipment.

D. Time Frame:

- 2 Weeks to build Bio-Cell and empty Lagoon 1 and part of Lagoon 2.
- Bioremediation treatments will be made approximately once a week.
- Tilling or turning over soil will be done approximately once a week.
- Sampling will be conducted once a month by Hammontree & Associates.
- Treatment process for the first 4,500 cubic yards should take between 3-6 months of warm weather.
- The second 4,500 cubic yards will follow the same schedule.

3. PERMITTING: Permitting will not be necessary for the bioremediation portion of this project.

4. BULKING: While The Critter Company does not anticipate to bulk any sludge material with native soils, we will need to add between 1/2 - 1 1/2 tons of a fertilizer and nutrient mixture.

5. SAMPLING AND ANALYSIS: The Critter Company requests that the EPA 418.1 method be run in conjunction with a GC method. We have two concerns about the 418.1 method. First, this method has a long history of yielding unpredictable and unreliable results. The Critter Company can provide documentation of the problems surrounding 418.1. Second, this method is expected to be abolished before the end of this project.

CDF005287

RECEIVED

JUN 6 1995

Page 3

CANTON DROP FORGE

If you have any questions or need additional information, please do not hesitate to call me at (614) 431-8190 or Jerry Coon at (520) 299-9808.

Sincerely,
THE CRITTER COMPANY, INC.

A handwritten signature in cursive script that reads "Scott Klingensmith". The signature is fluid and written in dark ink.

Scott Klingensmith
Project Coordinator

CDF005288

RECEIVED

MAY 24 1995

CANTON DROP FORGE

267

EXCAVATION COORDINATION

All instruction and coordination regarding the excavation, transportation and placement of soil and sludge shall be the sole responsibility of the Bioremediation contractor. Invoices for excavation services shall be passed directly to CDF with no mark-up. Payment for excavation services shall be made by CDF directly to the excavation contractor. All invoices from the excavator shall be approved by the Critter Company prior to payment by CDF.

PROGRESS MONITORING AND PAYMENT

Monitoring shall be achieved by sampling the biocell contents and testing for TPH by EPA Method 418.1. Target levels of 380 mg/kg will be used for this project.

Progress sampling shall occur approximately once a month during summer months and once every two months during winter months. Each sampling session will consist of five (5) random samples from the biocell material. When the average TPH concentration of the five (5) samples is less than the appropriate level, and no single sample has a TPH concentration more than 15 percent (15%) above the treatment level, the appropriate payment will be made. PHC-DRO analysis will be performed on composite samples at the beginning, approximate middle, and end of treatment.

Payments shall be made based on the treatment level achieved.

After establishing initial contamination concentration with five (5) random samples, payments will be made according to the following:

FIRST 4,500 CY

<u>Treatment Level</u> <u>(% reduction of TPH)</u>	<u>Payment, %</u>
25%	18%
50%	9%
75%	9%
100%*	<u>9%</u>
Total	45%

CDF005289

RECEIVED

MAY 24 1995

CANTON DROP FORGE

SECOND 4,500 CY

<u>Treatment Level</u> <u>(% reduction of TPH)</u>	<u>Payment, %</u>
25%	18%
50%	9%
75%	9%
100%	<u>9%</u>
Total	90%**

*Target level of 380 mg/kg by EPA Method 418.1 is to be achieved, see section titled "Acceptance of Target Levels".

**The final 10% payment will be made one month after achieving target levels, provided that a confirmatory set of lab results indicate that acceptable target levels have been achieved.

ACCEPTANCE OF TARGET LEVELS

Sampling sessions will consist of five (5) random samples from the biocell material. When four (4) of the five (5) random samples are below the target level of 380 mg/kg and the fifth random sample is not more than ten percent (10%) over the target level, treatment of the material within the biocell shall be considered conditionally complete. Three more random samples shall then be taken to verify treatment progress. If two (2) of the three (3) additional random samples have TPH levels less than or equal to 380 mg/kg and the third sample is not more than ten percent (10%) over the target level, treatment of the material within the biocell shall be considered complete and payment for that portion of the project paid.

REMOVAL OF SLUDGES AND SOIL FROM CDF SITE

No material from the CDF site shall be removed from CDF property without CDF consent. Should material removal be required for any reason, CDF materials shall not be mixed with any other materials (bulking, etc.) without CDF consent. The location and status of all materials leaving CDF shall be communicated with CDF as requested.



THE BEAVER EXCAVATING COMPANY

2(B)

July 18, 1995

Canton Drop Forge
4575 Southway St. S.W.
Canton, OH 44706

Attn: Keith Houseknecht

Re: Removal and Bioremediation of the
Sludge Lining Lagoons #1 & #2

Gentlemen:

As you are aware, dewatering of Pond #2 has been a time consuming effort by both Canton Drop Forge and Beaver Excavating.

Contractually we are not obligated to dewater the pond but have contributed our efforts to help expedite the pond cleaning.

As of today there is still some water and free product (oil sludge) remaining in the bottom of the pond. We have begun to excavate the sides of the pond this morning.

Please note that due to the present condition of the pond, i.e.; water and free product remaining in pond, process water continuously draining into pond, and the pervious sand and gravel bottom and sides, that Beaver Excavating will not be responsible for release of water or free product into subsoil pond bottom or sides.

If you have any questions, please feel free to call.

Thank you,

Stanley R. Evans
Project Manager

gi



4650 Southway S.W. • P.O. Box 6059 • Canton, Ohio 44706
216 478-2151 FAX 216 478-2122

CDF005291

HAMMONTREE & ASSOCIATES, LIMITED

2(b)

RECORD OF TELEPHONE CALLDATE 9/12/95 TIME 2:00PROJECT BIOREMEDIATIONTELEPHONE NO. 520-299-9808

FAX NO. _____

TO Jerry Coons OF Critter Co.
FROM GLH OF H & A

SUBJECT DISCUSSEDACTION TO BE TAKENSTATUS

1. STILL TREATING
2. MAY WANT TO SAMPLE IN ABOUT 2 WEEKS
3. BIO-CELL TO BE "TURNED" SATURDAY THE 16 OR SAT SEPT. 23.
4. HE HAS ATTORNEY TRYING TO GET CHANGE ORDER PROCESSED - HIS ATTORNEY HAS BEEN IN CONTACT w/ CDF'S ATTORNEY
5. 4-5 INOCULATIONS TO DATE
6. THEY ARE TRYING TO STIMULATE OIL EATING BUGS AND NOT STIMULATE THE NON-OIL EATERS.

DRAFT

Post-It™ brand fax transmittal memo 7671 # of pages 3

To Keith Houseknecht	From Gene Hall
Co. CDF	Co. Hammontree
Dept.	Phone # 499-8817
Fax # 477-2046	Fax # 499-0149

2(b)

September 29, 1995

V.D. 10/10/95
C. 3055
Mey

The Critter Company
6890 East Sunrise Drive #120-10
Tucson, Arizona 85715

Attention: Jerry Coon

Subject: Change Order requests
dated September 20, 1995
Change Order Number: BIO-LAG 1-1
Change Order Number: BIO-LAG 1-2
Payment Schedule

The following sections will address each item in your September 20, 1995 letter in order.

CHANGE ORDER - BIO-LAG 1-1, ITEM 1

The source of the debris currently in the bio-cell has not been demonstrated. The site of the bio-cell may be a possible source of foreign objects. Regardless of the origin of the debris, it may represent a subsurface condition which is "of an unusual, and differs materially from conditions ordinarily encountered and generally recognized as inherent in the work of the character provided in the Contract Documents" (4.2.3.4).

I will need to discuss this matter with CDF personnel prior to reaching a final position on this subject. However, this item does appear to have some potential merit.



- ① REMEDIATION OF THE LAGOONS WILL NOT HAVE A DIRECT EFFECT ON HOBBS
- ② THE PROPOSED CHANCE ORDER WAS SENT OUT WITHOUT CDF REVIEW.
- ③ ALSO
IT WAS WELL KNOWN THAT THE BIO CELL WAS NOT PROPERLY COVERED
SEVERAL WEEKS AFTER THE CELL WAS FULL I HELPED JERRY COON FIND YWC VIA ED GREEN. JERRY C HAD A MAGAZINE ARTICLE THAT CONTAINED INFO ON THE BROWN BEAR AUGER-AERATOR.
∴ HE JERRY C COULD NOT HAVE KNOWN THE HE WOULD USE AN AUGER-AERATOR NOR THAT DEBRIS WOULD BE A PROBLEM
BEAVER WAS ALLOWED TO STORE HIGH LIQUID MAT'L TOGETHER INSTEAD OF MIXING.
TO MY KNOWLEDGE NO BULKING MAT'L WAS ADDED
BEAVER WAS ALLOWED TO MIX AND DUMP MAT'L RANDOMLY AS APPROPRIATE TO PLACING LARGE PIECES IN ONE AREA.
HYDROGEN PEROXIDE WAS SET UP BUT NOT USED EFFECTIVELY. JERRY C DECIDED (I THINK) THAT IT WAS NOT NEEDED. (NO SET PROCEDURE)
BULKING, SEEDING, TESTING & TURNING HAS NOT OCCURRED ON A REGULAR SCHEDULE (NO SET PROCEDURE)



Hydromechanics Div.

- ④ Do we have a set procedure for approving & paying when CDF \$ are being spent? I assume much of the same approval processes will be used.
- ⑤ I would rather have a set schedule for aeration, seeding, bulking, & testing, based on TCC's expert opinion, today. I don't think we will be pleased with the results if we rely on this statement for performance.
- ⑥ Initial TPH levels of Cell 1 is complete
Who pays for testing
Who initiated testing
One sample min. must come from area of excess liquid.
Who pays for ~~the~~ DHC DPO analysis?
- ⑦ Why not just sample now? It has been way over a month since the last sample.
- ⑧ What is 'the work'?
Cell #1 6/95 - 9/96
Cell #2 6/97 - 9/98
Cell #3 6/99 - 9/00
- ⑨ If in-stu - - - - 30000 y. from Lagoon #1 and 9000 (should this be 6,000?) c.y. from Lagoon #2 - - - -

2(b)

CHANGE ORDER #1

PROJECT

Canton Drop Forge, Inc.
4575 Southway St., S.W.
P.O. Box 6902
Canton, Ohio 44706

**CHANGE ORDER
NUMBER 1**

DATE: 11/7/95

Contract No. 95-2A

CONTRACT FOR: Bio-remediation of oil contaminated soil from Lagoons #1 and #2.

Whereas, Canton Drop Forge, Inc. ("CDF") and The Critter Company, Inc. ("TCC") entered into a certain contract dated June 14, 1995 ("Contract") for the bio-remediation of oil contaminated soil from Lagoons #1 and #2; and

Whereas, certain disputes have arisen between CDF and TCC with reference to said contract with respect to debris, responsibility for aeration, contamination levels, requirement of completion within two years, and the payment schedule; and

Whereas, TCC was unable to furnish a performance bond as originally contemplated by the bid documents and suggested the payment schedule set forth in the contract in lieu of a performance bond as a means of limiting CDF's risk of TCC's non-performance; and

Whereas, the bio-cell as constructed by TCC contained 3,000 cubic yards and not 4,500 cubic yards as originally contemplated by TCC; and

Whereas, the initial progress sampling contained one sample with a TPH concentration more than fifteen percent (15%) above the treatment level; and

Whereas, TCC has heretofore submitted requested change orders styled "CHANGE ORDER NUMBER: BIO-LAG 1-1" and "CHANGE ORDER NUMBER: BIO-LAG 1-2"; and

Whereas, CDF rejected the proposed change orders but is willing to accept a change order with respect to the payment schedule contingent upon all other open issues, to wit - debris, responsibility for aeration, contamination levels, requirement of completion within two years, being resolved simultaneously

NOW, THEREFORE, IN CONSIDERATION OF THE MUTUAL AGREEMENTS set forth herein, CDF and TCC hereby agree to the following:

1. The recitals set forth above are incorporated herein and accepted by the parties as the basis of this Change Order Number 1.
- ⑤ 2. TCC recognizes and accepts its responsibility to provide aeration of the bio-cell as frequently as required in the expert opinion of TCC.
3. TCC accepts the condition of the bio-cell which was constructed under its supervision as set forth in the contract and waives any claim it has or might have with respect to debris in the bio-cell.
4. TCC accepts the contamination levels and waives any claim it has or might have with respect to the level of contamination.

5. CDF and TCC agree to the following payment schedule:

PROGRESS MONITORING AND PAYMENT

Monitoring shall be achieved by sampling the bio-cell contents and testing for TPH by EPA Method 418.1. Target levels of 380 mg/kg will be used for this project.

6 The initial TPH levels of each bio-cell shall be determined by five random samples from the material within the bio-cell prior to bio-remediation activities. Progress sampling shall occur approximately once a month during summer months and once every two months during winter months. Each sampling session will consist of five (5) random samples from the bio-cell material. When the average TPH concentration of the five (5) samples is less than the appropriate level, and no single sample has a TPH concentration more than fifteen percent (15%) above the treatment level, the appropriate payment will be made. PHC DRO analysis will be performed on composite samples at the beginning, approximate middle, and end of treatment.

Payments shall be based on the treatment level achieved.

FIRST 3,000 CY

Treatment Level (% reduction of TPH)	Payment %
25%	12%
50%	6%
75%	6%
100%	6%
Total	30%

SECOND 3,000 CY

Treatment Level (% reduction of TPH)	Payment %
25%	12%
50%	6%
75%	6%
100%	6%
Total	30%

THIRD 3,000 CY

Treatment Level (% reduction of TPH)	Payment %
25%	12%
50%	6%
75%	6%
100%	6%
Total	30%

*The final 10% payment will be made one month after achieving target levels, provided that a confirmatory set of lab results indicate that acceptable target levels have been achieved.

6. CDF agrees to waive the requirement that no single sample has a TPH concentration more than fifteen percent (15%) above the treatment level and to cause the payment of 12% of the contract price to be paid for the initial payment with respect to the First 3,000 cubic yards only.

7. CDF agrees to extend the December 13, 1996 date for completion of the work to December 13, 1997. Should contamination still exceed target levels (TPH \leq 380 ppm) on December 13, 1997, a meeting between CDF representatives and TCC shall occur. Based on this meeting CDF will either:

1. Require that all contaminated material resulting from this project be excavated and moved off site for disposal (no further treatment) at a regulated landfill, at no cost to CDF.

OR

2. Allow TCC six (6) additional months to achieve target levels at no cost to CDF. If after the six (6) month extension target levels have not been achieved, CDF may exercise Option 1. Should the landfilling option be exercised, TCC must receive CDF approval of all proposed disposal. After disposal CDF shall receive documentation verifying proper disposal. If TCC does not submit an approved disposal plan within six (6) months of the formal decision to exercise Option 1, CDF may seek outside contractors to remove the TPH contaminated soil resulting from ex-situ bio-remediation attempts. If in-situ means are used, 3,000 c.y. from Lagoon #1 and 9,000 c.y. from Lagoon #2 shall be removed. CDF will bill TCC for all disposal activities.

8. Except as amended herein, the Contract remains in full force and effect.

ACCEPTED BY:

**RECOMMENDED FOR
ACCEPTANCE BY:**

ACCEPTED BY:

Canton Drop Forge

Hammontree & Associates

The Critter Company, Inc.

By:
Date:

By:
Date:

By:
Date:

2(6)

COST SUMMARY REMEDIATION PROJECT

11/28/95

(97)

1. SPENDING TO DATE \$ 178,636.20

2. OUTSTANDING BILLS

(a) WORKMAN - SEPERATION SYSTEM \$130,879

(b) BEAVER - LAGOON REMEDIATION 67,544

(c) CRITTER - " " 117,000

SUB-TOTAL 315,423

& HAMMONTREE EXPENSES ?

3. PAYMENTS

FIRST { ESCROW FUND 21,364 First amount.
CDF 142,860

SUB-TOTAL 164,224

151,199 REMAINING

NEXT ESCROW 87,695

CDF 63,504

SUBTOTAL - 151,199

TOTAL ESCROW FUND = 109,059

CDF 206,364

TOTAL 315,423

2(b)

THE CRITTER COMPANY

Biological Remediation of Hydrocarbons

6890 E. Sunrise Drive, #120-10, Tucson, Arizona 85715 (520) 299-9808

STATEMENT

Date of Invoice: July 26, 1995

Reference: Contract Agreement 95-2A, Paragraphs 4 and 5.

Terms: Net

1) "Seeding" of Lagoon #1 with microorganisms and nutrients.

TOTAL DUE: \$ 3,000.00 (Total due deducted from contract cost of \$117,000.00)

Thank you.

Please remit check payable to: THE CRITTER COMPANY, INC. 6890 E. SUNRISE DRIVE,
#120-10, TUCSON, ARIZONA 85715

Sincerely,

Jeremy W. Coon, President

OK
KSH
8/14/95

2(b)

THE CRITTER COMPANY

Biological Remediation of Hydrocarbons

6890 E. Sunrise Drive, #120-10, Tucson, Arizona 85715 (520) 299-9808

STATEMENT

Date of Invoice: July 26, 1995

Reference: Contract Agreement 95-2A, Paragraphs 4 and 5.

Terms: Net

1) "Seeding" of Lagoon #1 with microorganisms and nutrients.

TOTAL DUE: \$ 3,000.00 (Total due deducted from contract cost of \$117,000.00)

Thank you.

Please remit check payable to: THE CRITTER COMPANY, INC. 6890 E. SUNRISE DRIVE,
#120-10, TUCSON, ARIZONA 85715

Sincerely,

Jeremy W. Coon, President

OK
12/31/95
8/14/95

2(b)

THE CRITTER COMPANY

Biological Remediation of Hydrocarbons

6890 E. Sunrise Drive, #120-10, Tucson, Arizona 85715 (520) 299-9808

STATEMENT

Date of Invoice: July 26, 1995

Order: verbal addition to Contract Agreement 95-2A

Terms: Net

- 1) Inoculated approximately 200-300 cubic yards of soil around the east and south rim of Lagoon #1 to eliminate further excavation and trucking of material to the "Bio-Cell". Further periodical inoculations to be performed at no charge for duration of project.

TOTAL DUE: \$ 1,800.00 (\$9.00 per cubic yard of soil)

Thank you.

Please remit check payable to: THE CRITTER COMPANY, INC. 6890 E. SUNRISE DRIVE,
#120-10, TUCSON, ARIZONA 85715

Sincerely,

Jeremy W. Coon, President

OK
KST
8/4/95



CANTON DROP FORGE

2(b)
February 22, 1996

Mr. Jerry Coon
6890 E. Sunrise Drive. #120-10
Tucson, Arizona 85715

Dear Mr. Coon:

With the spring season approaching, I would appreciate you advising me of your anticipated schedule for bioremediation treatments and tilling. Based on Scott Klingensmith's prior communication I have been planning on an April start date with treatments and tilling weekly or bi-weekly thereafter.

I am also interested in your plan for inoculations of the 200-300 cubic yards of material close to lagoon #1, your plan for bulking or draining the low areas of the bio-cell, and your plan for the hydrogen peroxide. If you do not anticipate using the hydrogen peroxide I would like to have the tanks and liquid removed because of the safety issues related to concentrated hydrogen peroxide.

Through the year, please let me know when you or your employees arrive on site and what is being accomplished. Call me if I can assist you in arranging for the spring startup.

Sincerely,

A handwritten signature in cursive script that reads 'Keith J. Houseknecht'.

Keith J. Houseknecht

CDF005303



CANTON DROP FORGE

2(b)

February 22, 1996

OVER

Mr. Jerry Coon
6890 E. Sunrise Drive, #120-10
Tucson, Arizona 85715

Dear Mr. Coon:

With the spring season approaching, I would appreciate you advising me of your anticipated schedule for bioremediation treatments and tilling. Based on Scott Klingensmith's prior communication I have been planning on an April start date with treatments and tilling weekly or bi-weekly thereafter.

I am also interested in your plan for inoculations of the 200-300 cubic yards of material close to lagoon #1, your plan for bulking or draining the low areas of the bio-cell, and your plan for the hydrogen peroxide. If you do not anticipate using the hydrogen peroxide I would like to have the tanks and liquid removed because of the safety issues related to concentrated hydrogen peroxide.

Through the year, please let me know when you or your employees arrive on site and what is being accomplished. Call me if I can assist you in arranging for the spring startup.

Sincerely,

Keith J. Houseknecht

CDF005304

2(b).

February 22, 1996

Mr. Jerry Coon
6890 E. Sunrise Drive, #120-10
Tucson, Arizona 85715

VOID
THIS LETTER DID NOT
GO OUT. SAVED TO
KEEP TRACK OF
PRIOR LETTERS

Dear Mr. Coon:

What is your schedule for work on our site? Looking back to your June 2, 1995 letter I would expect the time frame to be bioremediation treatments approximately once a week, tilling or turning over soil approximately once a week, and sampling once a month by Hammontree & Associates. Would the time between events ever be greater than 3 times the approximations? What is your plan for bulking or draining the low areas of the cell?

Scott Klingensmith in his April 28, 1995 letter to me indicated that the treatments and tilling would take place weekly or by-weekly in the months of April-October. Do you anticipate an April start date?

Is there a need for the tanks of hydrogen peroxide? If this material is not required I would like to get the contents and tanks off site. As you know there are safety issues to consider with concentrated hydrogen peroxide.

On the invoice statement dated July 26, 1995 for inoculating the 200-300 cubic yards of soil it was stated "Further periodical inoculations to be performed at no charge for duration of project." What should we expect this inoculation schedule to be?

Please let me know when you or your employees arrive on site and what is being accomplished. As you know it is my responsibility to know the details of this project.

Sincerely,

Keith J. Houseknecht

CDF005305



CANTON DROP FORGE

March 14, 1996

Mr. Jerry Coon
6890 E. Sunrise Drive, #120-10
Tucson, Arizona 85715

Dear Mr. Coon:

Vulcan Peroxidation Systems, Inc. has been in contact with me in regard to removal of the hydrogen peroxide and associated tanks. They expressed some concern about getting rid of the unused material. I told them that the details of the procedure and timing must be directed by you.

I was out to the cell on March 13 and was able to walk around on the material without sinking in. The areas that were wet last year are still wet. I am anxious to hear back from you as to the schedule for the year.

Sincerely,

Keith J. Houseknecht



2(b)

7

DAN WEID/ PEROXIDATION SYSTEMS INC.

Called 3/14/96

Visited Site, CDF 3/14/96

THEY CAN'T TAKE BACK PEROXID

THEY DON'T KNOW HOW TO GET RID OF IT

KEITH TOLD HIM TO WORK OUT DETAILS WITH
JERRY COON.

DAN HAS NOT BEEN ON SITE BEFORE

" WILL " BE " " AGAIN - MOST LIKELY

J. CURTISS & ASSOCIATES
524 Parkway View Drive
Pittsburgh, PA 15205
Phone: 412/788-1550
Fax: 412/788-1555

1
Order Number : 84000

RITE-LUBE CORPORATION

CD# 0246
Date - 6/22/90
SHIPPER NUMBER :

REVISION NO. : 001 MATERIAL SAFETY DATA SHEET

REVISION DATE : 1/26/90 *

Manufacturer's Name
E-LUBE CORPORATION

Emergency Telephone No.
313-984-3581

Box 120, Brookfield, Ohio 44403

Chemical Family

Trade Name and Synonyms

Graphite in Oil

ES 13557

Chemical Name and Synonyms

Structure

SECTION II - OSHA REGULATED INGREDIENTS

C.A.S. Material	Wgt %	Exposure Limit
8002-05-9 Petroleum Oil	76.00	5.00 MG/M3
7782-42-5 Graphite	20.00	15.00 MPPCF
7631-86-9 Amorphous Silica	2.00	6.00 MG/M3

SECTION III - PHYSICAL DATA

Boiling Point	N/A	Vapor Pressure	N/A	Vapor Density	N/A
Freezing Point	N/A	Evaporation Rate	N/A	Volatile	N/A
Specific Gravity	1.06	Solubility in Water :	Insoluble		
Chemically Reactive:	N				

C. : N/A G/L,
METHOD=EPA 24)

Appearance/Odor

Black Fluid; Mild Petroleum Odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point : >450 F	FLAMMABLE (EXPLOSIVE) LIMITS	Upper	N/A
		Lower	N/A

Odor
Vand Open Cup
Non-flammable Media
M, CARBON DIOXIDE, DRY CHEMICAL.
Initial Fire Fighting Procedures
F CONTAINED BREATHING SUPPLY.
Special Fire and Explosion Hazards
E.

SECTION V - HEALTH HAZARD DATA

Effects of Overexposure
Irritation
ACUTE EFFECTS EXPECTED WITHIN EXPOSURE LIMITS.

Chronic
CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING AND DIARRHEA.

CAUSE TEMPORARY EYE IRRITATION.

INGESTED OR PROLONGED CONTACT CAN CAUSE IRRITATION AND DERMATITIS.

RECEIVED

DEC 7 1990

CDF005308

CANTON DROP FORGE

Emergency and First Aid Procedures
Section

AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR.

Section

IF INDIVIDUAL CALM AND SEEK MEDICAL ATTENTION IMMEDIATELY.

WASH EYES WITH WATER AND SEEK MEDICAL ATTENTION IF IRRITATION OCCURS.

WASH WITH SOAP AND WATER; REMOVE CONTAMINATED CLOTHING AND LAUNDRY BEFORE REUSE.

SECTION VI - REACTIVITY DATA

Conditions Contributing to Instability

None.

Conditions Contributing to Hazardous Polymerization

None.

Incompatibility (MATERIALS TO AVOID)

STRONG OXIDIZERS.

Hazardous Decomposition of Products

CO₂.

SECTION VII - SPILL OR LEAK PROCEDURES

Actions to be Taken in Case Material is Released or Spilled

USE ADEQUATELY ABSORBENT MATERIAL AND TRANSFER TO CONTAINERS.

Disposal Method

CONSULT WITH FEDERAL, PROVINCIAL AND LOCAL WASTE REGULATIONS

SECTION VIII - SPECIAL PROTECTION INFORMATION

Exposure Limitation Requirements

MAINTAIN ADEQUATELY SUFFICIENT MECHANICAL VENTILATION TO MAINTAIN EXPOSURE BELOW TLV(S).

Protective Equipment:

WEAR EYE SPLASH GOGGLES OR OTHER APPROPRIATE EYE PROTECTION.

(c)

WEAR PROTECTIVE GLOVES TO PREVENT REPEATED OR PROLONGED CONTACT.

Respirator

IF THE TLV OF THE PRODUCT IS EXCEEDED, A MECHANICAL OR SELF-CONTAINED BREATHING APPARATUS IS ADVISED.

(c)

NO SPECIAL EQUIPMENT DEEMED NECESSARY UNDER NORMAL USAGE.

SECTION IX - SPECIAL PRECAUTIONS

Conditions to be Taken in Handling and Storage

AVOID PROLONGED INHALATION OF MISTS OR VAPORS.

All data are offered in good faith as typical values and not as a product specification. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

Order Number : 84000

RITE-LUBE CORPORATION **CDF#0247** Date - 6/22/90
SHIPPER NUMBER :

MATERIAL SAFETY DATA SHEET

REVISION NO. : 001

REVISION DATE : 1/26/90 *

SECTION I - SOURCE AND NOMENCLATURE

Manufacturer's Name
E-LUBE CORPORATION
Address

Emergency Telephone No.
313-984-5581

Box 120, Brookfield, Ohio 44403

Chemical Family

Trade Name and Synonyms
ES 13640

Appearance in Oil

Chemical Name and Synonyms
Structure

SECTION II - OSHA REGULATED INGREDIENTS

C. A. S. Material	Wgt %	Exposure Limit
8002-05-9 Petroleum Oil	58.00	5.00 MG/M3
7782-42-5 Graphite	23.00	15.00 MPPCF
7631-86-9 Amorphous Silica	2.00	6.00 MG/M3

SECTION III - PHYSICAL DATA

Boiling Point : N/A Vapor Pressure : N/A Vapor Density : N/A
 Melting Point : N/A Evaporation Rate : N/A Volatile : N/A
 Specific Gravity : 1.20 Solubility in Water : Insoluble
 Chemically Reactive : N
 C. : N/A G/L,
 METHOD=EPA 24)
 Appearance/Odor
 Odor Paste: Mild Petroleum Odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point : >450 F FLAMMABLE (EXPLOSIVE) LIMITS Upper : N/A
 Lower : N/A

Test Method
 Closed Cup
 Extinguishing Media
 M, CARBON DIOXIDE, DRY CHEMICAL.
 Special Fire Fighting Procedures
 F CONTAINED BREATHING SUPPLY.
 Special Fire and Explosion Hazards
 E.

SECTION V - HEALTH HAZARD DATA

Routes of Overexposure
 Irritation
 ACUTE EFFECTS EXPECTED WITHIN EXPOSURE LIMITS.
 Irritation
 CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING AND DIARRHEA.
 CAUSE TEMPORARY EYE IRRITATION.
 Prolonged or repeated contact can cause irritation and dermatitis.

CDF005310

RECEIVED

DEC 7 1990

Emergency and First Aid Procedures
Evacuation

AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR.

First Aid

KEEP INDIVIDUAL CALM AND SEEK MEDICAL ATTENTION IMMEDIATELY.

WASH EYES WITH WATER AND SEEK MEDICAL ATTENTION IF IRRITATION OCCURS.

WASH WITH SOAP AND WATER, REMOVE CONTAMINATED CLOTHING AND LAUNDRY BEFORE REUSE.

SECTION VI - REACTIVITY DATA

Conditions Contributing to Instability

STABLE.

Conditions Contributing to Hazardous Polymerization

NONE.

Compatibility (MATERIALS TO AVOID)

STRONG OXIDIZERS.

Hazardous Decomposition of Products

H₂, CO₂.

SECTION VII - SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled

APPLY ABSORBENT MATERIAL AND TRANSFER TO CONTAINERS.

Safe Disposal Method

CONSULT WITH FEDERAL, PROVINCIAL AND LOCAL WASTE REGULATIONS

SECTION VIII - SPECIAL PROTECTION INFORMATION

Ventilation Requirements

PROVIDE SUFFICIENT MECHANICAL VENTILATION TO MAINTAIN EXPOSURE BELOW TLV(S).

Protective Equipment:

WEAR EYE SPLASH GOGGLES OR OTHER APPROPRIATE EYE PROTECTION.

WEAR PROTECTIVE GLOVES TO PREVENT REPEATED OR PROLONGED CONTACT.

IF THE TLV OF THE PRODUCT IS EXCEEDED, A MECHANICAL OR SELF-CONTAINED BREATHING APPARATUS IS ADVISED.

NO SPECIAL EQUIPMENT DEEMED NECESSARY UNDER NORMAL USAGE.

SECTION IX - SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storage

AVOID PROLONGED INHALATION OF MISTS OR VAPORS.

The data are offered in good faith as typical values and not as a product specification. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

MATERIAL SAFETY DATA SHEET CDF# 0832

EFFECTIVE DATE: November 21, 1985

PAGE 1 OF 4



WYNN OIL COMPANY

1151 WEST FIFTH STREET, AZUSA, CALIFORNIA 91702

I. IDENTIFICATION

PRODUCT NAME: WATER FORGE 1211

CHEMICAL NAME:

SYNONYMS: Lubricating Compound

CAS # Mixture

II. PHYSICAL DATA

BOILING POINT, 760 mm Hg	212°F	FREEZING POINT	32°F
SPECIFIC GRAVITY (H ₂ O = 1)	1.16	VAPOR PRESSURE at 20°C.	Nonaqueous liquid only
VAPOR DENSITY (air = 1)	Nonaqueous liquids Only	SOLUBILITY IN WATER, % by wt.	100%
PERCENT VOLATILES BY VOLUME	65.2%	EVAPORATION RATE (Butyl Acetate = 1)	Nonaqueous liquid only
pH (AS IS)	8.5	pH AT 1:2 DILUTION	8.0

APPEARANCE AND ODOR Black thick paste, odorless

III. HAZARDOUS INGREDIENTS

MATERIAL	%	TLV	HAZARD
Graphite (CAS 7782-42-5)			

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	No flash		
FLAMMABLE LIMITS IN AIR, % by volume	LOWER	UPPER	NA
EXTINGUISHING MEDIA	Water, water spray, foam		
SPECIAL FIRE FIGHTING PROCEDURES	None indicated		
UNUSUAL FIRE AND EXPLOSION HAZARDS	DO NOT mix with oxidants e.g. chlorine, perchlorates, oxygen		

PHONE NUMBER
(818) 334-0231

N.D. - Not Determined N.A. - Not Applicable
< Less Than > Greater Than

CDF005312

V. HEALTH HAZARD DATA

TLV AND SOURCE:

Not established for the product

EFFECTS OF OVEREXPOSURE

SWALLOWING

May be slight irritant to digestive tract

SKIN ABSORPTION

Not anticipated to absorb

INHALATION

Not anticipated to have effect

SKIN CONTACT

No irritation anticipated

EYE CONTACT

May be slight irritant

EFFECTS OF REPEATED OVEREXPOSURE.

May be slight irritation to skin and eyes

OTHER EFFECTS OF OVEREXPOSURE

V. HEALTH HAZARD DATA (Continued)

EMERGENCY AND FIRST AID PROCEDURES:

SWALLOWING	DO NOT induce vomiting. Give 2-3 cups of water or milk. Call for medical help.
SKIN	Wash with soap and water. Remove contaminated clothing.
INHALATION	Remove person to fresh air.
EYES	Wash with large volumes of water for 15 minutes. If irritation persists, call for medical help.

NOTES TO PHYSICIAN

VI. REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID	Heat
UNSTABLE	STABLE		
	X		
INCOMPATIBILITY (materials to avoid)		Oxidizing Agents	
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS		Thermal decomposition may produce oxides of carbon.	
HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID	
May Occur	Will Not Occur		
	X		

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED	Absorb with sand or clay. Shovel into containers. Wash area with water. Keep liquid out of sewers and water.
WASTE DISPOSAL METHOD	Place in approved sanitary landfill in accordance with federal, state and local regulations. Disposal governed by RCRA regulations

CDF005314

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION

NIOSH approved respirator or cannister.

VENTILATION

Mechanical or local exhaust recommended.

PROTECTIVE GLOVES

Rubber or plastic gloves

EYE PROTECTION

Safety glasses .

OTHER PROTECTIVE EQUIPMENT

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Handle with reasonable care.
 Avoid skin and eye contact.
 DO NOT pour liquid to sewer.

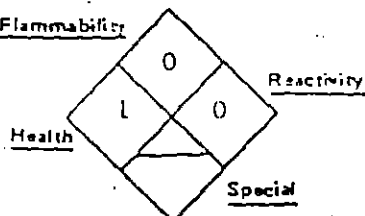
OTHER PRECAUTIONS

DATA FOR HAZARDS INFORMATION LABEL

Hazard Code

4 = Extreme
 3 = High
 2 = Moderate
 1 = Slight
 0 = Insignificant

Flammability



TRANSPORTATION REQUIREMENTS

DEPARTMENT
 OF
 TRANSPORTATION
 CLASSIFICATION



FLAMMABLE LIQUID



COMBUSTIBLE LIQUID



OXIDIZING MATERIAL



NON-FLAMMABLE GAS



FLAMMABLE SOLID



POISON, CLASS A



CORROSIVE MATERIAL



NOT HAZARDOUS BY D.O.T. REGULATIONS



FLAMMABLE GAS



POISON, CLASS B



IRRITATING MATERIAL



OTHER—Specify below

D.O.T. PROPER SHIPPING NAME

Compound Hot Topping

CDF005315

PREPARED BY:

Les Lugosi

MGR

COMPANY: WYNN OIL COMPANY

ADDRESS:

1151 West Fifth Street, Azusa, CA 91702

TEL. NO.: (818) 334-0231

ISSUE DATE:

11-21-85

PREV. DATE:

10-6-83

PRODUCT CODE NO. 88902, 88904

This information is, to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation or warranty or guarantee is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.



MATERIAL SAFETY DATA SHEET

CDF# 0416

PRODUCT Mac Forge 938-R-2

HAZARD RATING	Flame	Reactivity
4 - EXTREME	0	0
3 - HIGH	1	0
2 - MODERATE	0	0
1 - SLIGHT		
0 - INSIGNIFICANT	Toxicity	Special

SECTION I

WITCO MANUFACTURING DIVISION OR SUBSIDIARY		EMERGENCY TELEPHONE
1	WITCO CORPORATION-Metal Treating Specialties Division	MANUFACTURER
ADDRESS (NUMBER, STREET, CITY, STATE, ZIP CODE)		(312) 239-8300
2	9210 S. Sangamon Street, Chicago, IL 60620	CHEM TREC 1-(800) 424-9300
CHEMICAL NAME OR FAMILY		FORMULA
3	Water Soluble Graphited Forging Compound	4

SECTION II - CHEMICAL AND PHYSICAL PROPERTIES

CHEMICAL

PHYSICAL

HAZARDOUS DECOMPOSITION PRODUCTS	FORM
Combustion products of carbon dioxide and carbon monoxide.	8 Liquid
5	ODOR
INCOMPATIBILITY (KEEP AWAY FROM)	9 Characteristic
Strong oxidizers.	APPEARANCE
6	10 Viscous liquid.
LIST ALL TOXIC AND HAZARDOUS INGREDIENTS	COLOR
None	11 Black
7	SPECIFIC GRAVITY
	12 (WATER = 1) 1.189
	BOILING PT.
	13 ≈ 212 °C
	°F
	MELTING PT.
	14 N/A °C
	°F
	SOLUBILITY
	15 IN WATER
	20 Complete
	AT °C
	% VOLATILE
	16 (BY WT %) None
	EVAP. RATE
	17 Water = 1 ≈ 1
	VAPOR PRESSURE
	18 (mm Hg at 20 °C) Negligible
	VAPOR DENSITY
	19 (AIR = 1) NDA
	pH AS IS
	20 pH () N/A
	STRONG ACID <input type="checkbox"/>
	STRONG BASE <input type="checkbox"/>
	STABLE <input checked="" type="checkbox"/>
	UNSTABLE <input type="checkbox"/>
	21
	VISCOSITY
	22 SUS <100 <input type="checkbox"/>
	AT 100 °F 100 OR > <input checked="" type="checkbox"/>
	23

SECTION III - FIRE AND EXPLOSION DATA

SPECIAL FIRE FIGHTING PROCEDURES	FLASH POINT (METHOD USED)
None	NONE
24	26 °C °F
	FLAMMABLE LIMITS %
	27 LOWER N/A UPPER N/A
UNUSUAL FIRE AND EXPLOSION HAZARDS	EXTINGUISHING AGENTS
None	<input type="checkbox"/> DRYCHEMICAL <input type="checkbox"/> CO ₂
25	<input type="checkbox"/> WATERSPRAY <input type="checkbox"/> FOAM
	<input type="checkbox"/> WATERFOG <input type="checkbox"/> SAND/EARTH
	28 <input type="checkbox"/> OTHER None

SECTION IV - HEALTH HAZARD DATA

PERMISSIBLE CONCENTRATIONS (AIR)	
29 None established.	
EFFECTS OF OVEREXPOSURE	
30 G.I. distress if swallowed.	
TOXICOLOGICAL PROPERTIES	
31 Non-toxic	
EMERGENCY FIRST AID PROCEDURES	
32 EYES Immediately flush with large quantities of water for at least 15 minutes and call a physician.	
33 SKIN CONTACT Wash thoroughly with soap and water.	
34 INHALATION N/A	
35 IF SWALLOWED Contact a physician immediately.	

NA = NOT APPLICABLE

NDA = NO DATA AVAILABLE

<= LESS THAN

>= MORE THAN

WILCO MATERIAL SAFETY DATA SHEET

PRODUCT Mac Forge 938-R-2

SECTION V - SPECIAL PROTECTION INFORMATION

VENTILATION TYPE REQUIRED (LOCAL, MECHANICAL, SPECIAL)

Local exhaust sufficient to maintain low concentrations in the air.

PROTECTIVE GLOVES

Rubber Gloves

EYE PROTECTION

Chemical Splash Goggles

OTHER PROTECTIVE EQUIPMENT

None

SECTION VI - HANDLING OF SPILLS OR LEAKS

PROCEDURES FOR CLEAN-UP

Absorb with a suitable inert material, sweep up and dispose of in accordance with Federal, State and local regulations.

WASTE DISPOSAL

Dispose of consistent with Federal, State and local regulations.

SECTION VII - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Store in normal oil storage area in tightly closed containers. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Keep away from food.

SECTION VIII - TRANSPORTATION DATA

UNREGULATED BY D.O.T. <input checked="" type="checkbox"/>	U.S. D.O.T. PROPER SHIPPING NAME		
	NONE		
REGULATED BY D.O.T. <input type="checkbox"/>	U.S. D.O.T. HAZARD CLASS		I.D. NUMBER
	NOT APPLICABLE		
TRANSPORTATION EMERGENCY INFORMATION CHEM TREC 1-(800) 424-9300	RQ	LABEL(S) REQUIRED	
		NONE	
	FREIGHT CLASSIFICATION		
	METAL CUTTING OR DRAWING COMPOUND LIQUID		
	SPECIAL TRANSPORTATION NOTES		
	NONE		

SECTION IX - COMMENTS

Store indoors if possible to avoid freezing.

SIGNATURE

*Lawrence Cohen*TITLE Manager of ManufacturingREVISION DATE 012086

SENT TO ATTN: _____

DATE

3/5/86SUPERSEDES 042481

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind, express or implied, and we assume no responsibility for any loss, damage, or expense, direct or consequential, arising out of their use.

RECEIVED

PRODUCT Mac Forge 599HAZARD RATING
N 4 - EXTREME
F 3 - HIGH
P 2 - MODERATE
A 1 - SLIGHT
0 - INSIGNIFICANTFire
Reactivity
Toxicity
Special

SECTION I

WITCO MANUFACTURING DIVISION OR SUBSIDIARY

1 WITCO CORPORATION-Metal Treating Specialties Division

ADDRESS (NUMBER, STREET, CITY, STATE, ZIP CODE)

2 9210 S. Sangamon Street, Chicago, IL 60620

CHEMICAL NAME OR FAMILY

3 Graphited Petroleum Oils

FORMULA

EMERGENCY TELEPHONE

MANUFACTURER (312) 239-8300

CHEM TREC 1-800-424-9300

SECTION II - CHEMICAL AND PHYSICAL PROPERTIES

CHEMICAL

PHYSICAL

HAZARDOUS DECOMPOSITION PRODUCTS

Combustion products of carbon dioxide and carbon monoxide.

INCOMPATIBILITY (KEEP AWAY FROM)

Excessive heat and strong oxidizers.

LIST ALL TOXIC AND HAZARDOUS INGREDIENTS

None

FORM

8 Liquid

ODOR

9 Bland Oil

APPEARANCE

10 Viscous Liquid

COLOR

11 Black

SPECIFIC GRAVITY

12 (WATER = 1)

1.123

BOILING PT.

13 OVER

°C

550 °F

MELTING PT.

14

°C

N/A °F

SOLUBILITY

IN WATER

AT 20 °C

15

Negligible

% VOLATILE

16 (BY WT %)

None

EVAP. RATE

17 (= 1)

Nil

VAPOR PRESSURE

18 (mm Hg at 20 °C)

<0.05

VAPOR DENSITY

19 (AIR = 1)

Undetermined

pH AS IS

20 pH (N/A)

N/A

STRONG ACID

STRONG BASE

STABLE

UNSTABLE

21

VISCOSITY

SUS

AT 100 °F

22

<100

100 OR > 100

23

SECTION III - FIRE AND EXPLOSION DATA

SPECIAL FIRE FIGHTING PROCEDURES

Treat as hot oil fire.

Do not use water except as fog.

FLASH POINT (METHOD USED)

C.O.C. 400°

26 °C Min. °F

FLAMMABLE LIMITS %

27 LOWER N/A UPPER N/A

UNUSUAL FIRE AND EXPLOSION HAZARDS

None

EXTINGUISHING AGENTS

☒ DRYCHEMICAL ☒ CO₂☐ WATERSPRAY ☒ FOAM☒ WATERFOG ☐ SAND/EARTH28 ☐ OTHER

SECTION IV - HEALTH HAZARD DATA

PERMISSIBLE CONCENTRATIONS (AIR)

29 Petroleum Asphalt/Oil Mist, Mineral 5mg/M³ PEL OSHA5mg/M³ TWA/TLV ACGIH

EFFECTS OF OVEREXPOSURE

30 Prolonged skin contact may cause dermatitis (skin irritation). Inhalation of mist/fumes may cause

TOXICOLOGICAL PROPERTIES dizziness and/or drowsiness.

31 Unknown.

EMERGENCY FIRST AID PROCEDURES

32 EYES Immediately flush with large quantities of water for at least 15 minutes and call a physician.

33 SKIN CONTACT Wash thoroughly with soap and water.

34 INHALATION Remove to fresh air and call a physician.

35 IF SWALLOWED Contact a physician immediately.

NA = NOT APPLICABLE

NDA = NO DATA AVAILABLE

< = LESS THAN

> = MORE THAN

Witco MATERIAL SAFETY DATA SHEET

PRODUCT Mac Forge 599**SECTION V - SPECIAL PROTECTION INFORMATION**

VENTILATION TYPE REQUIRED (LOCAL, MECHANICAL, SPECIAL)

Local exhaust sufficient to maintain low TLV.

PROTECTIVE GLOVES

Oil Resistant Gloves

EYE PROTECTION

Chemical Splash Goggles

OTHER PROTECTIVE EQUIPMENT

None

RESPIRATORY PROTECTION (SPECIFY TYPE)

None required with adequate local exhaust.

SECTION VI - HANDLING OF SPILLS OR LEAKS

PROCEDURES FOR CLEAN-UP

Absorb with a suitable inert material, sweep up and dispose of in accordance with Federal, State and local regulations.

WASTE DISPOSAL

Dispose of consistent with Federal, State and local regulations.

SECTION VII - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Store in normal oil storage area in tightly closed containers. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Keep away from food.

SECTION VIII - TRANSPORTATION DATA

UNREGULATED BY D.O.T. <input checked="" type="checkbox"/>	U.S. D.O.T. PROPER SHIPPING NAME	
	NONE	
REGULATED BY D.O.T. <input type="checkbox"/>	U.S. D.O.T. HAZARD CLASS	I.D. NUMBER
	NOT APPLICABLE	N/A
TRANSPORTATION EMERGENCY INFORMATION	RQ	LABEL(S) REQUIRED
		NONE
	FREIGHT CLASSIFICATION	
	PETROLEUM OIL, NOIBN - NON-HAZARDOUS	
CHEM TREC	SPECIAL TRANSPORTATION NOTES	
1-(800) 424-9300	NONE	

SECTION IX - COMMENTS

None

SIGNATURE

Lawrence Cohen

TITLE

Manager of Manufacturing

REVISION DATE

021386

SENT TO ATTN:

DATE

3/5/86

SUPERSEDES

012086

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind, express or implied, and we assume no responsibility for any loss, damage, or expense, direct or consequential, arising out of their use.

RECEIVED

Witco MATERIAL SAFETY DATA SHEET

CDF # 0403

PRODUCT LO SMOKE 807-CDF FORGE LUBE

HAZARD RATING N F P A	4 - EXTREME	Fire Reactivity Toxicity Special
	3 - HIGH	
	2 - MODERATE	
	1 - SLIGHT	
	0 - INSIGNIFICANT	

SECTION I

WITCO MANUFACTURING DIVISION OR SUBSIDIARY

1 WITCO CORPORATION - Metal Treating Specialties Division

ADDRESS (NUMBER, STREET, CITY, STATE, ZIP CODE)

2 3401 WEST 140TH STREET, CLEVELAND, OHIO 44111

CHEMICAL NAME OR FAMILY

3 Graphited Petroleum Oils

FORMULA

4

EMERGENCY TELEPHONE

MANUFACTURER (216) 251-3505

CHEM TREC 1-(800) 424-9300

SECTION II - CHEMICAL AND PHYSICAL PROPERTIES

HAZARDOUS DECOMPOSITION PRODUCTS

5 Combustion products of carbon dioxide and carbon monoxide.

INCOMPATIBILITY (KEEP AWAY FROM)

6 Excessive heat and strong oxidizers.

LIST ALL TOXIC AND HAZARDOUS INGREDIENTS

7 None

SECTION III - FIRE AND EXPLOSION DATA

SPECIAL FIRE FIGHTING PROCEDURES

Treat as hot oil fire.

Do not use water except as fog.

24 UNUSUAL FIRE AND EXPLOSION HAZARDS

None

FLASH POINT (METHOD USED)

Pensky Martin C.C.

26 °C 525 °F

FLAMMABLE LIMITS %

27 LOWER N/A UPPER N/A

EXTINGUISHING AGENTS

☒ DRYCHEMICAL ☒ CO₂

☐ WATERSPRAY ☒ FOAM

☒ WATERFOG ☐ SAND/EARTH

28 ☐ OTHER

SECTION IV - HEALTH HAZARD DATA

PERMISSIBLE CONCENTRATIONS (AIR)

9 Petroleum Asphalt/Oil Mist, Mineral 5mg/M³ PEL OSHA
5mg/M³ TWA/TLV ACGIH

EFFECTS OF OVEREXPOSURE

10 Prolonged skin contact may cause dermatitis (skin irritation). Inhalation of mist/fumes may cause

TOXICOLOGICAL PROPERTIES dizziness and/or drowsiness.

11 Unknown

EMERGENCY FIRST AID PROCEDURES

2 EYES Immediately flush with large quantities of water for at least 15 minutes and call a physician.

3 SKIN CONTACT Wash thoroughly with soap and water.

4 INHALATION Remove to fresh air and call a physician.

5 IF SWALLOWED Contact a physician immediately.

PHYSICAL

FORM

8 Liquid

ODOR

9 Bland Oil.

APPEARANCE

10 Viscous Liquid

COLOR

11 Black

SPECIFIC GRAVITY

12 (WATER = 1) .960

BOILING PT.

13 OVER 550 °C
°F

MELTING PT.

14 N/A °C
°F

SOLUBILITY
IN WATER

15 AT 20 °C Negligible

16 % VOLATILE
(BY WT %)

None

EVAP. RATE

17 (= 1) Nil

VAPOR PRESSURE

18 (mm Hg at 20 °C) < 0.05

VAPOR DENSITY
(AIR = 1)

19 Undetermined

pH AS IS

20 pH N/A

STRONG ACID ☐

STRONG BASE ☐

STABLE ☒

UNSTABLE ☐

21

VISCOSITY
SUS AT 100 °F < 100 ☐
100 OR > ☒

22

23

NA = NOT APPLICABLE

NOA = NO DATA AVAILABLE

< = LESS THAN

> = MORE THAN

Witco MATERIAL SAFETY DATA SHEET

PRODUCT LO SMOKE 807-CDF FORGE LUB**SECTION V - SPECIAL PROTECTION INFORMATION**

VENTILATION TYPE REQUIRED (LOCAL, MECHANICAL, SPECIAL)		PROTECTIVE GLOVES	
Local exhaust sufficient to maintain low TLV.		38	Oil Resistant Gloves
36		EYE PROTECTION	
RESPIRATORY PROTECTION (SPECIFY TYPE)		39	Chemical Splash Goggles
None required with adequate local exhaust.		OTHER PROTECTIVE EQUIPMENT	
37		40	None

SECTION VI - HANDLING OF SPILLS OR LEAKS

PROCEDURES FOR CLEAN-UP

Absorb with a suitable inert material, sweep up and dispose of in accordance with Federal, State and local regulations.

41

WASTE DISPOSAL

Dispose of consistent with Federal, State and local regulations.

42

SECTION VII - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Store in normal oil storage area in tightly closed containers. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Keep away from food.

43

SECTION VIII - TRANSPORTATION DATA

UNREGULATED BY D.O.T. <input checked="" type="checkbox"/>		U.S. D.O.T. PROPER SHIPPING NAME	
44		47	NONE
REGULATED BY D.O.T. <input type="checkbox"/>		U.S. D.O.T. HAZARD CLASS	
45		48	NOT APPLICABLE
TRANSPORTATION EMERGENCY INFORMATION CHEM TREC 1-(800) 424-9300		49	I.D. NUMBER N/A
		50	RQ LABEL(S) REQUIRED
		51	NONE
		52	FREIGHT CLASSIFICATION PETROLEUM OIL, NOIBN - NON-HAZARDOUS
46		53	SPECIAL TRANSPORTATION NOTES NONE

SECTION IX - COMMENTS

54	NONE
----	------

SIGNATURE _____		TITLE _____	
REVISION DATE <u>2-21-86</u>	SENT TO	ATTN: _____	DATE _____
SUPERSEDES _____	_____		

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind, express or implied, and we assume no responsibility for any loss, damage, or expense, direct or consequential, arising out of their use.

CDF# 0287

901211ask

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1287

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME Grafo Colloids Division, Metal Lubricants Co.		EMERGENCY TELEPHONE NO. 1-800-255-3924
ADDRESS (Number, Street, City, State, and ZIP Code) 105 Eighth Street, Emlenton, PA 16373		
CHEMICAL NAME AND SYNONYMS Petroleum hydrocarbons + graphite		TRADE NAME AND SYNONYMS Grafo LN-693
CHEMICAL FAMILY		FORMULA

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)
{7782-42-5} Graphite (as nuisance particulate)				Approx. 40	15 mppcf

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	Not determined	SPECIFIC GRAVITY (H ₂ O=1)	1.1
VAPOR PRESSURE (mm Hg.)	@20° C. 0.01	PERCENT VOLATILE BY VOLUME (%)	Negligible
VAPOR DENSITY (AIR=1)	11	EVAPORATION RATE (n-butyl acetate = 1)	0.01
SOLUBILITY IN WATER	Negligible		
APPEARANCE AND ODOR	Black liquid with lubricating oil odor.		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	(C.O.C.) 530°F minimum	FLAMMABLE LIMITS	Loi 1%	Uoi 6%
EXTINGUISHING MEDIA	Foam, dry chemical, CO ₂ , water spray or fog			
SPECIAL FIRE FIGHTING PROCEDURES	Use air-supplied rescue equipment for enclosed areas.			
Cool exposed containers with water:				
UNUSUAL FIRE AND EXPLOSION HAZARDS	Do not store or mix with strong oxidants.			
CDE005322				

CDF005322

THRESHOLD LIMIT VALUE

5 mg/mg³ for oil mist

EFFECTS OF OVEREXPOSURE

Prolonged or repeated skin contact may cause mild irritation.

EMERGENCY AND FIRST AID PROCEDURES

Skin contact: wash with soap and water. If splashed into eyes, flush with clear water. Utilize procedures typical for lubricating oil exposure.

SECTION VI - REACTIVITY DATA
STABILITY

UNSTABLE

CONDITIONS TO AVOID

STABLE

X

INCOMPATIBILITY (Materials to avoid)

Strong oxidants

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide in the event of incomplete combustion

HAZARDOUS POLYMERIZATION

MAY OCCUR

CONDITIONS TO AVOID

WILL NOT OCCUR

X

SECTION VII - SPILL OR LEAK PROCEDURES
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Recover free liquid. Add

absorbent to spill area. Bury in landfill in accordance with local, state and federal regulations. Keep out of streams and waterways.

WASTE DISPOSAL METHOD

Incinerate or bury in approved landfill area.

SECTION VIII - SPECIAL PROTECTION INFORMATION
RESPIRATORY PROTECTION (Specify type)

Normally not needed.

VENTILATION

LOCAL EXHAUST

To capture or remove hot fumes

SPECIAL

MECHANICAL (General)

OTHER

PROTECTIVE GLOVES

To eliminate stains

EYE PROTECTION

If splashing likely.

OTHER PROTECTIVE EQUIPMENT

Oil-impervious clothing to avoid stains.

SECTION IX - SPECIAL PRECAUTIONS
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Keep containers closed and away from

open flames.

OTHER PRECAUTIONS

Causes black stains which are difficult to remove

CDF005323

CDF #0905

MATERIAL SAFETY DATA SHEET

PRODUCT DUBRO 500 FORGING COMPOUND

JUL 30 1995

HAZARD RATING N F P A	4 - EXTREME	
	3 - HIGH	
	2 - MODERATE	
	1 - SLIGHT	
	0 - INSIGNIFICANT	

SECTION I

1	DUBRO OIL CORPORATION	EMERGENCY TELEPHONE
2	2400 Mulberry Street • Cleveland, Ohio 44113 • Phone (216) 696-2646	MANUFACTURER (216) 696-2646
3	CHEMICAL NAME OR FAMILY Primarily Petroleum Hydrocarbon	FORMULA Mineral oil, graphite, Additives

SECTION II - CHEMICAL AND PHYSICAL PROPERTIES

CHEMICAL

PHYSICAL

HAZARDOUS DECOMPOSITION PRODUCTS		FORM	
5	None	8	Viscous Liquid
INCOMPATIBILITY (KEEP AWAY FROM)		ODOR	
6	Strong oxidizing agents	9	Bland
LIST ALL TOXIC AND HAZARDOUS INGREDIENTS		APPEARANCE	
7	None	10	Black Fluid
		COLOR	
		11	Black
		SPECIFIC GRAVITY (WATER = 1)	
		12	.91
		BOILING PT.	
		13	> 850 °C
		MELTING PT.	
		14	°C
		°F	
		SOLUBILITY IN WATER	
		15	Insoluble
		AT _____ °C	
		16	% VOLATILE (BY WT %)
		17	EVAP. RATE
		18	N/A
		VAPOR PRESSURE	
		19	0.01 mm
		(mm Hg at 20 °C)	
		VAPOR DENSITY (AIR = 1)	
		20	> 5
		pH AS IS	
		21	N/A
		pH ()	
		STRONG ACID _____	
		STRONG BASE _____	
		STABLE _____	
		UNSTABLE _____	
		VISCOSITY	
		SUS 0 < 100 □	
		AT 210 °F on 88 °C □	
		22	150-170
		23	

SECTION III - FIRE AND EXPLOSION DATA

SPECIAL FIRE FIGHTING PROCEDURES		FLASH POINT (METHOD USED)	
Chemical Extinguisher		26 301 °C 575 °F	
Normal methods for petroleum fires		FLAMMABLE LIMITS %	
24	None	27 LOWER _____ UPPER _____	
UNUSUAL FIRE AND EXPLOSION HAZARDS		EXTINGUISHING AGENTS	
None		<input checked="" type="checkbox"/> DRY CHEMICAL CO, X <input type="checkbox"/> WATER SPRAY <input type="checkbox"/> WATER FOG SAND/EARTH <input type="checkbox"/> OTHER	
25		28	

SECTION IV - HEALTH HAZARD DATA

PERMISSIBLE CONCENTRATIONS (AIR)	
29	N/A
EFFECTS OF OVEREXPOSURE	
30	N/A
TOXICOLOGICAL PROPERTIES	
31	None
EMERGENCY FIRST AID PROCEDURES	
32	EYES Flush with water-Consult Physician
33	SKIN CONTACT Wash with soap and water
34	INHALATION
35	IF SWALLOWED Consult Physician immediately

NA = NOT APPLICABLE

NDA = NO DATA AVAILABLE

< = LESS THAN

> = MORE THAN



MATERIAL SAFETY DATA SHEET

PRODUCT Dubro 500

PROTECTION INFORMATION

VENTILATION TYPE REQUIRED (LOCAL, MECHANICAL, SPECIAL)

General Plant Ventilation

PROTECTIVE GLOVES

None

EYE PROTECTION

Safety Glasses

OTHER PROTECTIVE EQUIPMENT

None

SECTION VI - HANDLING OF SPILLS OR LEAKS

PROCEDURES FOR CLEAN-UP

Apply oil absorbant, sweep up and
remove residue with alkaline cleaner

WASTE DISPOSAL

Place contaminated material in disposal containers
and bury in an approved landfill site

SECTION VII - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Avoid strong oxidizing agents

SECTION VIII - TRANSPORTATION DATA

UNREGULATED
BY D.O.T.



U.S. D.O.T. PROPER SHIPPING NAME

REGULATED
BY D.O.T.



U.S. D.O.T. HAZARD CLASS

I.D. NUMBER

TRANSPORTATION
EMERGENCY
INFORMATION

RQ

LABEL(S) REQUIRED

FREIGHT CLASSIFICATION

SPECIAL TRANSPORTATION NOTES

SECTION IX - COMMENTS

SIGNATURE

C. W. Roush

TITLE President

REVISION DATE

SENT TO ATTN:

DATE 07/01/95

SUPERSEDES

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind, express or implied, and we assume no responsibility for any loss, damage, or expense, direct or consequential, arising out of their use.

CDF # 0906

MATERIAL SAFETY DATA SHEET

PRODUCT DUBRO 550 FORGING COMPOUND

JUL 30 1995

HAZARD RATING
4 - EXTREME
3 - HIGH
2 - MODERATE
1 - SLIGHT
0 - INSIGNIFICANTFire
Reactivity
Toxicity
Special

SECTION I

DUBRO OIL CORPORATION

EMERGENCY TELEPHONE
MANUFACTURER
(216) 696-2646

• 2400 Mulberry Street • Cleveland, Ohio 44113 • Phone (216) 696-2646

CHEMICAL NAME OR FAMILY

FORMULA

Primarily Petroleum Hydro carbon

Mineral oil, graphite, additives

SECTION II - CHEMICAL AND PHYSICAL PROPERTIES

CHEMICAL

PHYSICAL

HAZARDOUS DECOMPOSITION PRODUCTS

None

INCOMPATIBILITY (KEEP AWAY FROM)

Strong oxidizing agents

LIST ALL TOXIC AND HAZARDOUS INGREDIENTS

None

No lead

No sulfur

FORM

Viscous liquid

ODOR

Bland

APPEARANCE

Black Fluid

COLOR

Black

SPECIFIC GRAVITY
(WATER = 1)

.90

BOILING PT.

> 850 °C

13

MELTING PT.

14

SOLUBILITY
IN WATER

Insoluble

AT °C

15

% VOLATILE
(BY WT %)

16

EVAP. RATE

N/A

17

VAPOR PRESSURE
(mm Hg at 20 °C)

0.01

18

VAPOR DENSITY
(AIR = 1)

> .50

19

pH AS IS
pH ()

N/A

20

STRONG ACID ☐
STRONG BASE ☐
STABLE ☐
UNSTABLE ☐

21

VISCOSITY
SUS ☐
AT 100°F 100 OR > ☐

22

170-180

23

SECTION III - FIRE AND EXPLOSION DATA

SPECIAL FIRE FIGHTING PROCEDURES

Chemical Extinguisher use
normal methods for petroleum
fires

FLASH POINT (METHOD USED)

26 °C °F

FLAMMABLE LIMITS %

27 LOWER UPPER

UNUSUAL FIRE AND EXPLOSION HAZARDS

None

EXTINGUISHING AGENTS

☐ DRYCHEMICAL ☐ CO₂☐ WATERSPRAY ☐ FOAM☐ WATERFOG ☐ SAND/EARTH28 ☐ OTHER

SECTION IV - HEALTH HAZARD DATA

PERMISSIBLE CONCENTRATIONS (AIR)

N/A

EFFECTS OF OVEREXPOSURE

N/A

TOXICOLOGICAL PROPERTIES

None

EMERGENCY FIRST AID PROCEDURES

32 EYES Flush with water- consult a Physician

33 SKIN CONTACT Wash with soap and water

34 INHALATION

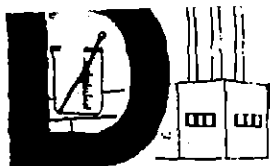
35 IF SWALLOWED See Physician immediately

NA = NOT APPLICABLE

NDA = NO DATA AVAILABLE

< = LESS THAN

> = MORE THAN



MATERIAL SAFETY DATA SHEET

PRODUCT Dubro 550

PROTECTION INFORMATION

VENTILATION TYPE REQUIRED (LOCAL, MECHANICAL, SPECIAL)

General Plant Ventilation

PROTECTIVE GLOVES

38 None

EYE PROTECTION

39 Safety Glasses

OTHER PROTECTIVE EQUIPMENT

40 None

36
RESPIRATORY PROTECTION (SPECIFY TYPE)

None

SECTION VI - HANDLING OF SPILLS OR LEAKS

PROCEDURES FOR CLEAN-UP

Apply oil absorbant, sweep up and
remove residue with alkaline cleaner

41
WASTE DISPOSAL

Place contaminated material in disposal containers
and bury in an approved landfill site

SECTION VII - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Avoid strong oxidizing agents

SECTION VIII - TRANSPORTATION DATA

UNREGULATED
BY D.O.T.

44 ☒ U.S. D.O.T. PROPER SHIPPING NAME

REGULATED
BY D.O.T.

45 ☐ U.S. D.O.T. HAZARD CLASS

I.D. NUMBER

TRANSPORTATION
EMERGENCY
INFORMATION

46 RQ

LABEL(S) REQUIRED

50

51

FREIGHT CLASSIFICATION

52

SPECIAL TRANSPORTATION NOTES

53

SECTION IX - COMMENTS

SIGNATURE

C.W. Rough

TITLE President

REVISION DATE

SENT TO ATTN:

DATE 07/01/95

SUPERSEDES

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2(6)

Note to File

Re: LAGOON #1 Remediation

2/6/96

I FOUND A NUMBER OF OLD PICTURES TODAY WHICH SHOW AREAS OF THE 3 LAGOONS. THEY WERE TAKEN ~ 1992

FORGINGS, BRICK, CONCRETE, TALLS, TREE LIMBS
LARGE ROCKS ARE EVIDENT ALTHOUGH THE
PICTURES WERE NOT FOR THAT PURPOSE AND
I REMEMBER OUTCROPPINGS THAT WERE
MORE EXTENSIVE TO THE SOUTH OF THE
INLET ON LAGOON #1 (SOUTH EAST CORNER)

2(b)

BRICK

ROCKS

BOARDS



BRICK

CONCRETE
OUT CROPPINGS

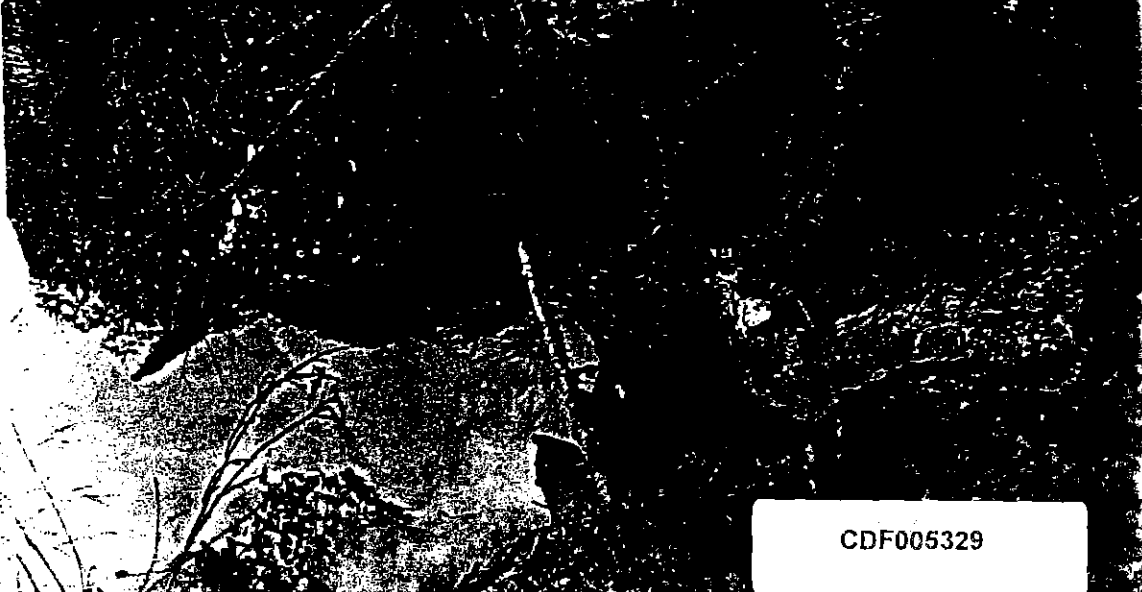
WOOD

METAL STAKES



FORGINGS

STEEL BAR



CDF005329



SUNPRO PROPOSAL P-3206R

PAGE 3

2ND TP PRIOR TO SEEDING THEY WOULD
DETERMINE LEVEL OF CONTAMINATION

CRITERIA JAN 6 1993

TERMS & COND

TCC WILL BE RUN

a TREATABILITY STUDY

CRITERIA "THE BIOREMEDIATION PROCESS"
"A PRACTICAL GUIDELINE"

PAGE 3 METHODOLOGY DEPENDS ON GENERAL ECOLOGY
CHEMISTRY & CONCENTRATIONS

APPLICATION

OBVIOUSLY COMPLEX INTERPRETATION REQUIRED

PAGE 4

TOXICITY "REQUIRED COMPATIBILITY TEST"
SUMMARY

{ SOIL TYPE
SOIL CHEMISTRY
ORGANIC CONTENT
TOXIC MATERIALS
TEMPERATURE

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